

# MONTANA

## Teachers' Retirement System A Component Unit of the State of Montana



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## ANNUAL REPORT FISCAL YEAR ENDED JUNE 30, 2003

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Judy Martz, Governor

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# **MONTANA**

## **Teachers' Retirement System** **A Component Unit of the State of Montana**

### **ANNUAL REPORT** **FISCAL YEAR ENDED JUNE 30, 2003**

**David L. Senn**  
**Executive Director**

**Tammy Rau**  
**Deputy Executive Director**

**Prepared by:**  
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**<http://www.trs.doa.state.mt.us>**

**Alternative accessible formats of this document will be provided upon request.**

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# **INTRODUCTORY SECTION**

**EXECUTIVE DIRECTOR'S LETTER OF  
TRANSMITTAL**

**BOARD OF DIRECTORS AND PROFESSIONAL  
CONSULTANTS**



# TEACHERS' RETIREMENT SYSTEM



1500 E. SIXTH AVENUE  
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HELENA, MONTANA 59620-0139

(406) 444-3134

JUDY MARTZ, GOVERNOR

## STATE OF MONTANA

December 2, 2003

Honorable Judy Martz  
Governor of Montana  
Room 204, State Capitol  
Helena, MT 59620

Dear Governor Martz:

On behalf of the Montana Teachers' Retirement Board, we are pleased to present the Montana Teachers' Retirement System Annual Report for the fiscal year ended June 30, 2003. This report is intended to provide comprehensive information on the financial operations of the Montana Teachers' Retirement System (TRS) for the year. Responsibility for the accuracy of the data, and the completeness and fairness of the report rests with the management of the TRS.

This report contains four sections:

1. An Introductory section, which includes this letter of transmittal and a list of the board members, administrative officers and professional consultants.
2. A Financial section containing the independent auditor's report, management's discussion and analysis, and the financial statements with accompanying footnotes and required supplementary information.
3. An Actuarial section representing the results of our most recent annual actuarial valuation.
4. A Statistical section containing tables of significant data.

The TRS was established by state law in 1937 and has completed its 66<sup>th</sup> year of operation. The TRS is providing services to over 19,500 active members and managing assets valued in excess of \$2.19 billion.

### Investment Activity

Fiscal Year 2003 saw a positive turnaround for the TRS pension plan investments. The TRS investment portfolio posted a 6.46% return, resulting in an overall increase in the fair market value of its investments. The System's total annualized rate of return over the last five and ten years was 2.6% and 7.89% respectively. The Board of Investments invests the TRS and other pension portfolios for the long-term and its investment strategies are designed to provide sufficient returns over time. However, there is no guarantee of future investment performance.

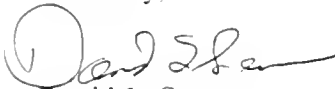
Performance in any given year is dependent not only on the Board's investment performance but also on the performance of the markets themselves, which are impacted by domestic and global economic conditions, interest rates, and government policies. Subsequent to the fiscal year end of June 30 the economy has shown some improvement, which in turn has resulted in improved stock market conditions. However, if the investment losses experienced in the past few years are not offset by significant future gains, the amortization period of the Unfunded Actuarial Accrued Liabilities in future valuations will fall outside the measures acceptable as actuarial sound.

### **Conclusion**

The Teachers' Retirement Board is pleased to submit this 2003 annual report to you reflecting an unqualified opinion from the Legislative Audit Division, which can be found on page 11.

On behalf of the Board, I would like to thank the staff, the Board's advisors, and the many people whose commitment, dedication, and proficiency has directly contributed to the successful operation of the financial soundness of the Montana Teachers' Retirement System. The Teachers' Retirement Board and staff look forward to continuing to serve the educators of Montana.

Sincerely,

A handwritten signature in dark ink, appearing to read "David L. Senn", written over a circular stamp or seal.

David L. Senn  
Executive Director



**TEACHERS' RETIREMENT SYSTEM  
BOARD OF DIRECTORS AND  
PROFESSIONAL CONSULTANTS**

**BOARD OF DIRECTORS**

TIM RYAN CHAIR	07-01-00 to 07-01-04
JAMES TURCOTTE VICE CHAIR	07-01-01 to 07-01-05
EMILY BOGUT	07-01-02 to 07-01-07
SCOTT DUBBS	07-01-04 to 07-01-09
BARBARA FOSTER	08-01-01 to 07-01-06
MONA BILDEN	02-11-03 to 07-01-06

**PROFESSIONAL CONSULTANTS**

MILLIMAN USA	Actuaries & Consultants Seattle, WA 98101
ICEMILLER	Legal & Business Advisors Indianapolis, IN 46282



# **FINANCIAL SECTION**

**INDEPENDENT AUDITOR'S REPORT**

**MANAGEMENT'S DISCUSSION & ANALYSIS**

**STATEMENT OF FIDUCIARY NET ASSETS**

**STATEMENT OF CHANGES  
IN FIDUCIARY NET ASSETS**

**NOTES TO FINANCIAL STATEMENTS**

**REQUIRED SUPPLEMENTARY INFORMATION**



# LEGISLATIVE AUDIT DIVISION



Scott A. Seacat, Legislative Auditor  
John W. Northey, Legal Counsel

Deputy Legislative Auditors:  
Jim Pellegrini, Performance Audit  
Tori Hunthausen, IS Audit & Operations  
James Gillett, Financial-Compliance Audit

## INDEPENDENT AUDITOR'S REPORT

To the Teachers' Retirement Board:

We have audited the accompanying Statement of Fiduciary Net Assets of the Teachers' Retirement System, a component unit of the state of Montana, as of June 30, 2003, and 2002, and the related Statement of Changes in Fiduciary Net Assets for each of the fiscal years then ended. These financial statements are the responsibility of the Teachers' Retirement Board. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Teachers' Retirement Board as of June 30, 2003, and 2002, and the changes in fiduciary net assets for each of the fiscal years then ended, in conformity with accounting principles generally accepted in the United States of America.

The Management's Discussion and Analysis, the Schedule of Funding Progress, and the Schedule of Contributions from the Employer and Other Contributing Entities are not a required part of the financial statements but are supplementary information required by the Governmental Accounting Standard Board. We have applied certain limited procedures, which consisted principally of inquiries of management regarding the methods of measurement and presentation of the supplementary information. However, we did not audit the information and express no opinion on it.

The Introductory Section, Actuarial Section, and Statistical Section listed in the foregoing table of contents are presented for the purpose of additional analysis and are not a required part of the financial statements. Such additional information has not been subjected to the auditing procedures applied in the audit of the financial statements and, accordingly, we express no opinion on it.

The Teachers' Retirement System actuarial gains and losses are smoothed over five years and only one-fifth of each previous year's actuarial loss has been recognized in the amortization period as of July 1, 2002. This leaves almost \$443 million in unrecognized investment losses, which must be recognized over the next three to four years. This unrecognized loss, if not offset by future gains, will cause the amortization period of the unfunded actuarial accrued liability in future valuations to fall outside the measures accepted as actuarially sound.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "James Gillett", with a long horizontal flourish extending to the right.

James Gillett, CPA  
Deputy Legislative Auditor

October 17, 2003

## **TEACHERS' RETIREMENT SYSTEM MANAGEMENT'S DISCUSSION AND ANALYSIS**

This discussion and analysis of the Montana Teachers' Retirement System's annual report provides a narrative overview of the TRS's financial activities for the fiscal year ended June 30, 2003. Please read this in conjunction with the transmittal letter presented in the introductory section and the financial statements with accompanying footnotes and required supplementary information included later in this financial section.

### **Overview of the Financial Statements**

This financial section consists of two financial statements with footnotes and two schedules of historical trend information. The Statement of Fiduciary Net Assets reflects the resources available to pay benefits to retirees and beneficiaries. The Statement of Changes in Fiduciary Net Assets presents the changes that occurred in those resources for the fiscal year ended.

The Schedule of Funding Progress presents historical trend information about the actuarially funded status for the TRS plan from a long-term, ongoing perspective and the progress made in accumulating sufficient assets to pay benefits when due. The Schedule of Contributions from the Employer and Other Contributing Entities displays historical trend data of the annual required employer contributions and the actual contributions made by employers in relation to the requirement.

### **Financial Highlights**

- The TRS plan net assets increased by \$81.9 million representing a 4% increase for the fiscal year ended June 30, 2003.
- Total contributions to the plan also increased by 4.1% from the previous year from \$100.2 million to \$104.3 million.
- Net investment income (fair value of investments plus investment income less investment expense) showed a gain for the fiscal year after having incurred losses for the two previous years. A \$126.3 million gain was achieved versus the previous year's loss of \$159.6 million.
- Pension benefits and withdrawals paid to plan members and beneficiaries totaled \$146.7 million for the fiscal year. Benefit payments increased 7.9%, \$130 million to \$140.3 million.
- Administrative expenses totaled \$1.86 million up from \$1.61 million, an increase of 15.5%.

## Financial Analysis (in millions)

	<u>FY2003</u>	<u>FY2002</u>	<u>% Inc/(Dec)</u>
Cash/Cash Equivalents	\$ 67.2	\$ 45.1	49.0
Investments (fair value)	2,098.8	2,078.8	1.0
Liabilities	70.4	111.8	(37.0)
Net Assets	2,123.6	2,041.7	4.0
Contributions	104.3	100.2	4.1
Net Investment Income/(Loss)	126.3	(159.6)	>100
Benefit Pmts & Withdrawals	146.7	136.5	7.5
Administrative Expenses	1.86	1.61	15.5

- The increase in cash/cash equivalents is due primarily to an increase in our number of shares held in the Short Term Investment Pool.
- The decrease in liabilities is due mostly to a \$30.8 million decrease in the value of Securities on Loan at June 30, 2003. Also in FY2002 an \$11.1 million equity purchase was done with a trade date of June 28, 2002 and a settlement date of July 3, 2002, which straddles our fiscal year end date of June 30, 2002.
- The increase in net investment income was due primarily to the positive appreciation in the fair value of our investments.
- The increase in benefit payments and withdrawals was due to an increase in the number of retirees and beneficiaries plus the 1.5% guaranteed annual benefit adjustment.
- The increase in administrative expenses was due primarily to an increase in personal service and contracted services costs.

## Overview of the Actuarial Funding

While the financial statements show a positive net investment income return of \$126.3 million for fiscal year 2003, this return is still less than what is needed to yield the actuarial assumed rate of 8.0%. Actuarial gains or losses result when the return on the actuarial value of assets differs from the actuarial investment return assumption.

Because actuarial gains and losses are smoothed over five years, only one fifth of each previous year's actuarial loss has been recognized in the amortization period as of July 1, 2002, leaving almost \$443 million in unrecognized investment losses, which must be recognized over the next three to four years. This unrecognized loss, if not offset by future gains, will cause the amortization period of the Unfunded Actuarial Accrued Liability (UAAL) in future valuations to fall outside the measures accepted as actuarially sound. Therefore, to remain actuarially sound for future years, the System will need to incur future gains that would result from a significant recovery in the investment market, a reduction in liabilities, an increase in contribution rates, or any combination thereof.

The next actuarial valuation is scheduled to be completed as of July 1, 2004, and distributed in October 2004. Based on the results of this valuation and input from our membership, the TRS Board will recommend options to the Legislature that may be necessary to remain actuarially sound.



**TEACHERS' RETIREMENT SYSTEM**  
**A COMPONENT UNIT OF THE STATE OF MONTANA**  
**STATEMENT OF FIDUCIARY NET ASSETS**  
**JUNE 30, 2003 AND 2002**

	<u>2003</u>	<u>2002</u>
<b>ASSETS</b>		
Cash/Cash Equivalents-Short Term		
Investment Pool (Note A)	\$ 67,248,556	\$ 45,106,331
Receivables:		
Accounts Receivable	15,568,694	14,336,758
Interest Receivable	8,927,249	9,740,964
Due from Primary Government	84,300	1,587,305
Total Receivables	<u>\$ 24,580,243</u>	<u>\$ 25,665,027</u>
Investments, at fair value (Note A):		
Mortgages	\$ 90,823,459	\$ 145,439,305
Investment Pools	1,926,576,113	1,667,824,675
Other Investments	11,326,655	165,596,248
Securities Lending Collateral (Note A)	70,099,111	99,887,388
Total Investments	<u>\$2,098,825,338</u>	<u>\$2,078,747,616</u>
Assets Used in Plan Operations:		
Land and Buildings	\$ 193,844	\$ 193,844
Less: Accumulated Depreciation	(124,827)	(121,064)
Equipment	147,087	137,249
Less: Accumulated Depreciation	(121,066)	(112,035)
Prepaid Expense	2,992	0
Intangible Assets, net of amortization (Note D)	<u>3,320,631</u>	<u>3,836,503</u>
Total Other Assets	<u>\$ 3,418,661</u>	<u>\$ 3,934,497</u>
<b>TOTAL ASSETS</b>	<u><b>\$2,194,072,798</b></u>	<u><b>\$2,153,453,471</b></u>
<b>LIABILITIES</b>		
Accounts Payable	\$ 212,760	\$ 11,732,963
Due to Primary Government	22,562	58,173
Securities Lending Liability (Note A)	70,099,111	99,887,388
Compensated Absences (Note A)	104,105	83,811
<b>TOTAL LIABILITIES</b>	<u><b>\$ 70,438,538</b></u>	<u><b>\$ 111,762,335</b></u>
<b>NET ASSETS HELD IN TRUST</b>		
<b>FOR PENSION BENEFITS (A Schedule of</b>		
<b>Funding Progress is presented on page 25)</b>	<u><b>\$2,123,634,260</b></u>	<u><b>\$2,041,691,136</b></u>

*The accompanying Notes to the Financial Statements  
are an integral part of this financial statement.*

**TEACHERS' RETIREMENT SYSTEM**  
**A COMPONENT UNIT OF THE STATE OF MONTANA**  
**STATEMENT OF CHANGES IN FIDUCIARY NET ASSETS**  
**FISCAL YEARS ENDED JUNE 30, 2003 AND 2002**

	<u>2003</u>	<u>2002</u>
<b>ADDITIONS</b>		
Contributions:		
Employer	\$ 53,276,950	\$ 51,518,712
Plan Member	50,221,491	47,872,258
Other	<u>753,838</u>	<u>762,422</u>
Total Contributions	\$ 104,252,279	\$ 100,153,392
 Misc Income	 \$ 4,011	 \$ 0
Workers Comp. Dividend	213	255
Taxes	236	0
 Investment Income:		
Net Appreciation/(Depreciation)		
in Fair Value of Investments	\$ 30,665,509	\$(253,162,567)
Investment Earnings	98,020,849	96,262,329
Security Lending Income (Note A)	<u>1,268,968</u>	<u>2,796,477</u>
Investment Income/(Loss)	\$ 129,955,326	\$(154,103,761)
Less: Investment Expense	2,683,417	3,074,434
Less: Security Lending Expense (Note A)	<u>1,025,993</u>	<u>2,407,203</u>
Net Investment Income/(Loss)	<u>\$ 126,245,916</u>	<u>\$(159,585,398)</u>
 Total Additions	 <u>\$ 230,502,655</u>	 <u>\$ (59,431,751)</u>
 <b>DEDUCTIONS</b>		
Benefit Payments	\$ 140,229,496	\$ 130,006,163
Withdrawals	6,468,324	6,472,327
Administrative Expense (Note D)	<u>1,860,967</u>	<u>1,606,737</u>
Total Deductions	<u>\$ 148,558,787</u>	<u>\$ 138,085,227</u>
 <b>NET INCREASE (DECREASE)</b>		
<b>IN PLAN NET ASSETS</b>	 \$ 81,943,868	 \$(197,516,978)
 <b>NET ASSETS HELD IN TRUST</b>		
<b>FOR PENSION BENEFITS</b>		
<b>BEGINNING OF YEAR</b>	2,041,691,136	2,239,208,114
Prior Period Adjustment	<u>(744)</u>	<u>0</u>
<b>END OF YEAR</b>	<u>\$2,123,634,260</u>	<u>\$2,041,691,136</u>

*The accompanying Notes to the Financial Statements  
are an integral part of this Financial Statement*

**TEACHERS' RETIREMENT SYSTEM  
A COMPONENT UNIT OF THE STATE OF MONTANA  
NOTES TO THE FINANCIAL STATEMENTS  
FISCAL YEARS ENDED JUNE 30, 2003 AND 2002**

**NOTE A. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

**Basis of Accounting**

The Teachers' Retirement System (TRS), a discretely presented component unit Pension Trust Fund of the State of Montana financial reporting entity, maintains its accounts on the accrual basis of accounting. Employee and employer contributions are recognized as revenues in the period in which employee services are performed and expenses are recorded when the corresponding liabilities are incurred, regardless of when payment is made.

**Valuation of Investments**

Investments are reported at fair value. Short-term investments are reported at cost, which approximates fair value. Mortgages were decreased by unamortized mortgage discount of \$17,326 in fiscal year 2003 and \$22,808 in fiscal year 2002. No investment in any one organization represents 5% or more of the net assets available for pension benefits. Investment units are bought/sold on the first business day of each month upon the decision of the Board of Investment's (BOI) Chief Investment Officer.

The six areas of investment during June 30, 2003 and 2002 include: Montana Domestic Equity Pool (MDEP)/Montana Stock Pool (MTCP); Montana International Equity Pool (MTIP); Short-Term Investment Pool (STIP); Retirement Funds Bond Pool (RFBP); Montana Private Equity Pool (MPEP), and Other Investments.

1. The BOI established creation of the MDEP in April 2003. Effective May 1, 2003, the TRS exchanged their investment in the MTCP for units in the new MDEP. The MDEP/MTCP portfolio may include common stock, equity index, preferred stock, convertible equity securities and equity derivatives. Since January 2003, MTCP unit values are calculated weekly and at the close of the last business day of the month. The initial MDEP unit value on May 1, 2003 was \$100. On conversion date, TRS MTCP units, valued at \$302 per unit, were exchanged for an equivalent value of MDEP units, issued at \$100 per unit. Unit value at June 30, 2003 and June 30, 2002 was \$106 per unit and \$317 per unit respectively.

2. MTIP portfolio includes equity investments in five funds – BOI Internal International, Pyrford International, Schroder Investment Management NA, SG Yamaichi Asset Management Inc. and Barclays Global Investors. The five funds may invest in securities of foreign-based corporations listed on legal and recognized foreign exchanges as well as domestic exchanges. Security types may include ordinary common shares, preferred shares, convertible securities, American Depositary Receipts (ADR's), Global Depositary Receipts (GDR's) and other global securities, as appropriate. Unit values are calculated weekly based upon the fair value of equity

holdings, other assets and liabilities. Unit value at June 30, 2003 and June 30, 2002 was \$83.39 per unit and \$91.12 per unit respectively.

3. STIP as per Montana Code Annotated (MCA) section 17-6-201, 202 and 204, requires investments by state agencies of available funds. The STIP unit value is fixed at \$1 for both participant buys and sells. The STIP portfolio may include asset-backed securities, commercial paper, corporate and government securities, repurchase agreements, and variable-rate (floating-rate) instruments to provide diversification and a competitive rate of return.

According to the Governmental Accounting Standards Board (GASB) Statement No. 31, Accounting and Financial Reporting for Certain Investments and External Investment Pools, STIP is considered an external investment pool. An external investment pool is defined as an arrangement that pools the monies of more than one legally separate entity and invests, on the participant's behalf, in an investment portfolio. STIP is also classified as a "2a7-like" pool. A 2a7-like pool is an external investment pool that is not registered with the Securities and Exchange Commission (SEC) as an investment company, but has a policy that it will, and does, operate in a manner consistent with the SEC's Rule 2a7 of the Investment Company Act of 1940. If certain conditions are met, 2a7-like pools are allowed to use amortized cost rather than fair value to report net assets to compute unit values. The BOI has adopted a policy to treat STIP as a 2a7-like pool.

4. RFBP portfolio includes corporate asset-backed, other corporate, U. S. government mortgage-backed, government, Yankee securities and cash investments. Unit values are calculated weekly and at month end based on portfolio pricing. Unit value at June 30, 2003 and June 30, 2002 was \$110.84 per unit and \$103.56 per unit respectively. Realized portfolio gains/losses are distributed at least annually. The RFBP portfolio includes structured financial instruments known as REMICs (Real Estate Mortgage Investment Conduits).

As of June 30, 2003 and June 30, 2002, Enron Corp. and Burlington Industries, Inc. presented legal and higher credit risks to the RFBP.

The RFBP holds a \$7 million par 6.40% Enron bond maturing July 15, 2006 and a \$7 million par 6.95% Enron bond maturing July 15, 2028. The combined book value of these securities was \$13,582,030 as of November 30, 2001. On December 12, 2001, the Enron Corp. filed for Chapter 11 bankruptcy protection. Accordingly, the November 2001 book value for the two issues was reduced to \$5.6 million as of June 30, 2002. In October 2002, the book value was reduced to \$2.8 million for both issues. In July 2003, both issues were sold, on the market, for a total of \$2.36 million.

The BOI owns a Burlington Industries, Inc., \$6 million par, 7.25% bond maturing September 15, 2005. In September 2000, the company announced a reduction of stockholders equity. Due to an increasing senior bank line and declining credit trend, the bond ratings for this issue were downgraded, in May 2001, by the Moody's and Standard & Poor's rating agencies. During fiscal year 2001, the book value of Burlington Industries Inc. was reduced from the August 31, 2000 book value of \$5,609,640 to \$2,400,000. Due to the company's filing for Chapter 11 bankruptcy

protection on November 11, 2001, the book value was reduced to \$1,200,000. In October 2003, Burlington Industries, Inc. received court approval to sell its assets. This sale is expected to close in November 2003. Under the company's recovery plan, the BOI will receive cash for its unsecured claim.

As of June 30, 2002, Rite Aid and WorldCom Inc. presented a higher credit risk to the BOI.

The RFBP owned a Rite Aid \$7,000,000 par, 7.13% bond maturing January 15, 2007. In May 2000, the BOI was subordinated to a secured bank line of credit on this issue and the bond ratings were downgraded by the Moody's and Standard & Poor's bond ratings agencies. Based on this subordination and ratings downgrade, the book value was reduced to \$5,600,000 as of June 30, 2000. During fiscal year 2001, the book value was further reduced to \$5,220,172. Due to an improving credit trend, amortization was resumed in June 2001. The book value of this security at June 30, 2002 was \$5,541,139. As of June 30, 2002, Rite Aid did not represent a credit risk. In December 2002, this bond was sold, on the market, for \$5,057,500 principal plus interest of \$206,427.

The RFBP portfolio included a \$6,000,000 par, 6.95% WorldCom Inc. bond maturing August 15, 2028. The book value of this bond, originally purchased at a discount, was \$5,477,400 on June 30, 2002. On July 21, 2002, WorldCom Inc. filed for Chapter 11 bankruptcy protection. As of July 31, 2002, the reduced book value was \$2,400,000. On November 7, 2002, the Attorney General for the State of Montana filed a lawsuit against certain WorldCom executives, directors and financial institutions associated with WorldCom such as Arthur Andersen and CitiGroup. The lawsuit, filed in Lewis and Clark County, Montana, alleges that the defendants filed "false and misleading registration statements" relating to the purchase of the bonds by the Montana Board of Investments. In December 2002, this bond was sold, on the market, for \$1.5 million.

#### DEUTSCHE BANK SECURITIES, INC. COMPLAINT

The BOI received a summons and complaint, dated September 3, 2002, regarding the sale of a Pennzoil Quaker State, \$5 million par, 6.75% corporate bond maturing April 1, 2009. Deutsche Bank Securities claims a "breach of contract" for the March 25, 2002 sale of the bond at a price of \$94.669 plus accrued interest. Deutsche Bank Securities seeks damages of \$538,632 for the additional costs incurred to acquire the bond from third parties, plus any statutory interest, costs and expenses. On October 1, 2002, Shell Oil Company acquired Pennzoil and subsequently announced a public tender of Pennzoil Quaker State debt. The BOI tendered the Pennzoil Quaker State holdings on October 8, 2002 at a price of \$113.099. The tender was accepted with a settlement date of November 1, 2002. On November 4, 2002, the BOI received \$5,683,075 in principal and interest plus \$150,000 as a consent fee.

5. The MPEP was established by the BOI in April 2002. The BOI contracts with six private equity managers to invest in venture capital, leveraged buyout and other private equity investments. The retained private equity managers are Adams Street Partners, Kohlberg, Kravis, Roberts and Company (KKR), Welsh Carson Anderson and Stowe, Madison Dearborn Partners,

Lexington Partners and Oaktree Capital Management. According to BOI policy, the external managers may not invest more than 20% of private equity invested capital total in non-US company partnerships unless the fund is a designated non-US fund. Venture capital represents private equity investments in early stage financing of rapidly growing companies with an innovative product or service. Leveraged buy-outs permit an investment group to acquire a company by leveraging debt, as a financing technique, to establish a significant ownership position on behalf of the company's current management team.

The TRS transferred all their venture capital and leveraged buyout investments, at cost, into the MPEP at the start-up date and were issued units according to the fair value of each participant's portfolio and cash contributions. Unit value is calculated at month end. Unit value at June 30, 2003 and June 30, 2002 was \$102.28 and \$97.38 per unit respectively.

6. Other Investments are purchased in accordance with the statutorily mandated "Prudent Expert Principle" and applicable investment restrictions of the participants. The TRS portfolio includes residential mortgages, commercial loans and real estate investments. The real estate investments and mortgages are valued based on a discounted cash flow.

Real Estate - In January 1996, the BOI, on behalf of the Public Employees' and Teachers' Retirement Systems, purchased the 100 North Park Avenue Building in Helena, Montana as a real estate investment. At June 30, 2003 the building carries a cost and fair value of \$5,830,826 and \$5,573,173, respectively. At June 30, 2002 cost and fair value was \$5,701,360 and \$5,344,000, respectively.

In August 1997, the BOI authorized the construction of an office building, as a real estate investment owned equally by the Public Employees' and Teachers' Retirement funds. At June 30, 2003, the building carries a cost and fair value of \$6,987,238 and \$7,581,770, respectively. At June 30, 2002 cost and fair value was \$6,831,438 and \$7,581,000, respectively.

Securities Lending – Under the provisions of state statutes, BOI, via a Securities Lending Authorization Agreement, authorized the custodial bank, State Street Bank and Trust, to lend the BOI securities to broker-dealers and other entities with a simultaneous agreement to return the collateral for the same securities in the future. During the period the securities are on loan, BOI receives a fee and the custodial bank must initially receive collateral equal to 102 percent of the fair value of the loaned securities and maintain collateral equal to not less than 100 percent of the fair value of the loaned security. BOI retains all rights and risks of ownership during the loan period.

During fiscal years 2003 and 2002, State Street Bank lent, on behalf of the BOI, certain securities held by State Street, as custodian, and received US dollar currency cash, US government securities, and irrevocable bank letters of credit. State Street does not have the ability to pledge or sell collateral securities unless the borrower defaults.

The BOI did not impose any restrictions during fiscal years 2003 and 2002 on the amount of the loans that State Street Bank made on its behalf. There were no failures by any borrowers to

return loaned securities or pay distributions thereon during fiscal years 2003 and 2002. Moreover, there were no losses during fiscal years 2003 and 2002 resulting from a default of the borrowers or State Street Bank.

During fiscal years 2003 and 2002, the BOI and the borrowers maintained the right to terminate all securities lending transactions on demand. The cash collateral received on each loan was invested, together with the cash collateral of other qualified plan lenders, in a collective investment pool, the Securities Lending Quality Trust. The relationship between the average maturities of the investment pool and the BOI's loans was affected by the maturities of the loans made by other plan entities that invested cash collateral in the collective investment pool, which the BOI could not determine. On June 30, 2003 and June 30, 2002, the BOI had no credit risk exposure to borrowers.

As of June 30, 2003, the carrying and fair value of the underlying securities on loan for the All Other Funds was \$49,363,730 and \$55,128,809, respectively. The collateral provided for the securities on loan totaled \$56,643,400 in cash collateral.

As of June 30, 2002, the carrying and fair value of the underlying securities on loan for the All Other Funds was \$101,344,163 and \$106,533,000, respectively. The collateral provided for the securities on loan totaled \$109,960,231 in cash collateral.

#### DEUTSCHE BANK SECURITIES, INC. COMPLAINT

The BOI received a summons and complaint, dated September 3, 2002, regarding the sale of a Pennzoil Quaker State, \$2 million par, 6.75% corporate bond maturing April 1, 2009. Deutsche Bank Securities claims a "breach of contract" for the March 25, 2002 sale of the bond at a price of \$94.669 plus accrued interest. Deutsche Bank Securities seeks damages of \$215,453 for the additional costs incurred to acquire the bond from third parties, plus any statutory interest, costs and expenses. On October 1, 2002, Shell Oil Company acquired Pennzoil and subsequently announced a public tender of Pennzoil Quaker State debt. The BOI tendered the Pennzoil Quaker State holdings on October 8, 2002 at a price of \$113.099. The tender was accepted with a settlement date of November 1, 2002. On November 4, 2002, the BOI received \$2,273,230 in principal and interest plus \$60,000 as a consent fee.

#### Compensated Absences

Compensated absences represent 100 percent of accrued vacation and 25 percent of accrued sick leave for TRS personnel at June 30, 2003 and June 30, 2002.

## NOTE B. DESCRIPTION OF PLAN

The Teachers' Retirement Board is the governing body of a mandatory multiple-employer cost-sharing defined benefit pension plan, which provides retirement services to persons in Montana employed as teachers or professional staff of any public elementary or secondary school, colleges of technology or unit of the university system. The system was established by the state of Montana in 1937 to provide, retirement, death and disability benefits and is governed by Title 19, chapter 20, of the MCA.

At June 30, 2003, the number and type of reporting entities participating in the system were as follows:

Local School Districts	374
Community Colleges	3
University System Units	2
State Agencies	<u>8</u>
Total	387

At June 30, 2003, the system membership consisted of the following:

Retirees and Beneficiaries Currently Receiving Benefits	9,682
Terminated Employees Entitled to But Not Yet Receiving Benefits (Includes dormant accounts)	11,326
Current Active Members:	
Vested	11,827
Nonvested	<u>7,710</u>
Total Membership	40,545
University System Employees	
Optional Retirement Plan (ORP)	4,739

The pension plan provides retirement benefits and death and disability benefits. Employees with a minimum of 25 years of service or who have reached age 60 with 5 years of service are eligible to receive an annual retirement benefit equal to creditable service years divided by 60 times the average final compensation. Final compensation is the average of the highest three consecutive years of earned compensation. Benefits fully vest after 5 years of creditable service. Vested employees may retire at or after age 50 and receive reduced retirement benefits. Effective July 1, 1999, legislation providing a Guaranteed Annual Benefit Adjustment of 1.5% payable each January was implemented for all retirees who had been receiving benefits for at least 36 months. This legislation also provided for a one-time ad hoc \$500 minimum benefit adjustment for any retiree who retired with at least 25 or more years of creditable service and on July 1, 1999, was receiving less than \$500 per month. The employee contribution rate was also increased from 7.044% to 7.15%.



The 2001 legislature increased the \$500 minimum benefit to \$600 for members who retired with 25 or more years of creditable service with no change in contribution rates. The legislature also authorized the TRS Board to increase GABA from 1.5% to a maximum of 3.0%, providing sufficient assets are available. The GABA was not increased in FY 2003.

#### **NOTE C. CONTRIBUTIONS**

The TRS funding policy provides for monthly employee and employer contributions at rates specified by state law. Plan members are currently required to contribute 7.15% of their earned compensation and employers contribute 7.47% of earned compensation. The State General Fund contributes an additional 0.11% of earned compensation. The Montana University System currently contributes 4.04% of the total compensation of employees participating in the ORP program. An actuary determines the actuarial implications of the funding requirement in biennial actuarial valuations. The actuarial method used to determine the implications of the statutory funding level is the entry age actuarial cost method, with both normal cost and amortization of the accrued liability determined as a level percentage of payroll. The actuarial valuation prepared as of July 1, 2002, the most recent valuation date, indicates the statutory rate was sufficient to fund the normal cost and to amortize the unfunded accrued liability under the entry age actuarial cost method over 23.4 years. The unfunded actuarial accrued liability is included in the Schedule of Funding Progress.

#### NOTE D. ADMINISTRATIVE EXPENSES

The administrative costs of the TRS are financed through realized investment income. The expenses, less amortization of intangible assets, may not exceed 1.5% of retirement benefits paid. Administrative expenses for the fiscal years ended June 30, 2003 and 2002, are outlined below:

	<u>2003</u>	<u>2002</u>
Personal Services:		
Salaries	\$ 589,127	\$ 470,798
Other compensation	2,000	3,300
Employee benefits	151,779	126,179
Compensated Absences	<u>20,294</u>	<u>0</u>
Total Personal Services	<u>\$ 763,200</u>	<u>\$ 600,277</u>
Operating Expenses:		
Contracted services	\$ 401,576	\$ 298,056
Supplies and materials	36,052	37,198
Communications	38,334	43,207
Travel	10,624	11,067
Rent	31,928	32,490
Repair and maintenance	34,016	22,367
Other expenses	16,571	25,585
Depreciation	12,795	13,533
Interest	<u>0</u>	<u>8,858</u>
Total Operating	<u>\$ 581,896</u>	<u>\$ 492,361</u>
Amortization	<u>\$ 515,872</u>	<u>\$ 514,099</u>
Total Administrative Expense	<u>\$1,860,968</u>	<u>\$1,606,737</u>

#### NOTE E. SUBSEQUENT EVENT

In May of 1999, TRS contracted with BearingPoint, Inc. (formerly KPMG Consulting), to customize, integrate and implement the PeopleSoft Pension Administration, Human Resource and Financials modules. On December 23, 2002, the Board indefinitely suspended the implementation date for the PeopleSoft system in anticipation of discontinuing the contract with BearingPoint. On July 22, 2003 working through a mediator an agreement was reached in which BearingPoint would pay TRS \$1.5 million and the contract would end. TRS received the \$1.5 million payment on September 12, 2003. At June 30, 2003 the unamortized software development costs were \$3.3 million.

**Teachers' Retirement System**  
**A Component Unit of the State of Montana**  
**Required Supplementary Information**

**Schedule of Funding Progress**  
**(All dollar amounts in millions)**

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liabilities (AAL) <sup>(1)</sup>	Unfunded Actuarial Accrued Liabilities (UAAL) <sup>(2)</sup>	Funded Ratio	Covered Payroll <sup>(3)</sup>	UAAL as a Percentage of Covered Payroll
July 1, 1992	\$ 954.5	\$ 1,533.9	\$ 579.3	62.2%	\$ 465.1	124.6%
July 1, 1994	1,157.5	1,712.9	555.4	67.6	472.9	117.4
July 1, 1996	1,376.7	1,939.6	562.9 <sup>(4)</sup>	71.0	501.5	112.2
July 1, 1998 <sup>(5)</sup>	1,809.0	2,123.3	314.3	85.2	529.8	59.3
July 1, 1998 <sup>(6)</sup>	1,809.0	2,342.7	533.7	77.2	529.8	100.7
July 1, 2000 <sup>(7)</sup>	2,247.5	2,648.3	400.8	84.9	537.5	74.6
July 1, 2000 <sup>(8)</sup>	2,247.5	2,652.0	404.5	84.7	537.5	75.3
July 1, 2002	2,484.8	2,980.1	495.3	83.4	563.2	87.9

(1) Actuarial present value of benefits less actuarial present value of future normal costs based on entry age actuarial cost method

(2) Actuarial accrued liabilities less actuarial value of assets

(3) Covered Payroll includes compensation paid to all active employees on which contributions are calculated. Covered Payroll differs from the Active Member Valuation Payroll shown in Table C-1, which is an annualized compensation of only those members who were active on the actuarial valuation date.

(4) Note that although the UAAL increased from 1994 to 1996, the Covered Payroll increased more. Therefore, both the UAAL as a Percentage of Covered Payroll and the amortization period for the UAAL decreased.

(5) Results of July 1, 1998 Actuarial Valuation.

(6) July 1, 1998 results adjusted for 1.5% GABA and \$500 minimum benefit for legislation which passed in April 1999 and the new salary scale adopted in November 1998.

(7) Results of July 1, 2000 Actuarial Valuation.

(8) July 1, 2000 results adjusted for \$600 minimum benefit for legislation passed in Spring 2001.

**Teachers' Retirement System**  
**A Component Unit of the State of Montana**  
**Required Supplementary Information**

**Schedule of Contributions from the Employer and Other Contributing Entities**  
(All dollar amounts in thousands)

Fiscal Year Ending	Covered Employee Payroll <sup>(1)</sup>	Actual Employer Contributions <sup>(2)</sup>	Actual Employer Contribution % <sup>(2)</sup>	Annual Required Contribution (ARC) % <sup>(3)</sup>	Percentage of ARC Contributed
6/30/1995	\$ 486,809	\$ 39,073	7.47%	7.47%	100%
6/30/1996	501,516	40,627	7.47	7.47	100
6/30/1997	511,934	41,640	7.47	7.47	100
6/30/1998	529,795	44,476	7.47	7.47	100
6/30/1999	543,071	44,987	7.47	7.47	100
6/30/2000	537,507	48,376	7.58	7.58	100
6/30/2001	567,861	51,524	7.58	7.58	100
6/30/2002	563,163	51,519	7.58	7.58	100
6/30/2003	597,131	53,277	7.58	7.58	100

(1) Computed as the dollar amount of the actual employer contribution made as a percentage of payroll divided by the contribution rate expressed as a percentage of payroll.

(2) The actual and required employer contributions are expressed as a percentage of payroll. Contributions for termination pay are included in the actual employer contribution, but are not made as a set percentage of payroll. In the Fiscal Year ended June 30, 2003 there were \$4.2 million of contributions for termination pay. Contributions made as a percentage of the salaries of the members in the Optional Retirement Plan (ORP) are included. In the Fiscal Year ended June 30, 2003, \$4.5 million was contributed based on ORP member salaries. The ORP contribution rate varies from year to year.

(3) The State makes employer contributions as a percentage of actual payroll. Thus, as long as the percentage equals the percentage required by the most recent actuarial valuation, the dollar amount of the Annual Required Contributions (ARC) is equal to the actual dollar amount of the required employer contributions.

**TEACHERS' RETIREMENT SYSTEM  
A COMPONENT UNIT OF THE STATE OF MONTANA  
NOTES TO THE SUPPLEMENTARY SCHEDULES  
FISCAL YEARS ENDED JUNE 30, 2003 AND 2002**

**Actuarial Cost Method**

The actuarial valuation was prepared using the entry age actuarial cost method. Under this method, the actuarial present value of the projected benefits of each individual included in the valuation is allocated as a level percentage of the individual's projected compensation between entry age and assumed exit. The portion of this actuarial present value allocated to a valuation year is called the normal cost. The normal cost was first calculated for each individual member. The normal cost rate was defined to equal the total of the individual normal costs, divided by the total pay rate as of July 1, 2002.

The portion of this actuarial present value not provided for at a valuation date by the sum of (a) the actuarial value of the assets and (b) the actuarial present value of future normal costs is called the unfunded actuarial liability. The unfunded actuarial liability is amortized as a level percentage of the projected salaries of present and future members of the System.

**Valuation of Assets - Actuarial Basis**

Adopted July 1, 2000, the actuarial asset valuation method spreads asset gains and losses over five years. The expected return is determined each year based on the beginning of year market value and actual cash flows during the year. Any difference between the expected market value return and the actual market value return is recognized evenly over a period of five years. The gains and losses are measured starting with the fiscal year ended June 30, 1997.

**Investment Earnings**

The annual rate of investment earnings of the assets of the System is assumed to be 8%, compounded annually.

**Guaranteed Annual Benefit Adjustment Increases**

On January 1 of each year, the retirement allowance payable must be increased by 1.5% if the retiree's most recent retirement effective date is at least 36 months prior to January 1 of the year in which the adjustment is to be made.

## **Future Salaries**

The rates of annual salary increases assumed for the purpose of the valuation include a 5.0% annual rate of increase in the general wage level of the membership plus a variable merit and longevity rate from 0% to 4.51%. The merit and longevity increases for the Montana University System (MUS) members did not show a pattern of increasing or decreasing with service at the time of our most recent study. Therefore, the MUS members have a flat 1% merit and longevity assumption. The general wage increase assumption was adopted July 1, 1998 and the merit and longevity scales were adopted July 1, 2002.

MUS members are assumed to have a 0.63% higher average final compensation to account for the larger than average annual compensation increases observed in the years immediately preceding retirement.

## **Amortization Period**

The current employer contribution rate of 7.47% and the State General Fund contribution of 0.11% of members' salaries are sufficient to meet the actuarial cost of the System accruing at the valuation date and to amortize the unfunded actuarial liability over an open period of 23.4 years as of July 1, 2002.

# **ACTUARIAL SECTION**

## **ANALYSIS OF VALUATION**

- 1. SUMMARY OF FINDINGS**
- 2. SCOPE OF THE REPORT**
- 3. ASSETS**
- 4. ACTUARIAL PRESENT VALUE  
OF FUTURE BENEFITS**
- 5. EMPLOYER CONTRIBUTIONS**

## **APPENDICES**





# Teachers' Retirement System A Component Unit of the State of Montana

## Section 1

### Summary of Findings

As a result of the actuarial valuation of the benefits in effect under the Montana Teachers' Retirement System as of July 1, 2002, we recommend that the current employer contribution rate, 7.58% of members' salaries, remain in effect.

The 7.58% rate is sufficient to meet the actuarial cost of the System accruing at the valuation date and to amortize the unfunded actuarial accrued liability over 23.4 years. The actuarial costs are calculated using the entry age actuarial cost method. This actuarial valuation measures the adequacy of the contribution rates set in Montana State Law. MCA 19-20-604 states that the employer contribution rate will return to 7.47% when the amortization period of the System's unfunded actuarial accrued liability is 10 years or less according to the System's latest actuarial valuation.

### Experience

The 2002 actuarial valuation indicates that an actuarial loss occurred during the preceding two fiscal years. The loss is primarily due to lower returns on the assets than expected by the actuarial assumptions, and is reflected in the 9.2% and 3.8% net investment return on an actuarial basis for the past two years. The following chart compares the annual returns for the past four years.

<u>Year</u>	<u>Market Return</u>	<u>Actuarial Return</u>	<u>Actuarial Return over 8.0% Assumption</u>
7/1/1998 to 6/30/1999	11.9%	12.3%	4.3%
7/1/1999 to 6/30/2000	7.8%	12.8%	4.8%
7/1/2000 to 6/30/2001	(5.1)%	9.2%	1.2%
7/1/2001 to 6/30/2002	(7.3)%	3.8%	(4.2)%

Asset gains or losses result when the return on the actuarial value of assets differs from the actuarial investment return assumption of 8.0%. The actuarial return on assets has under performed the assumption by about 3% (1.2% - 4.2%) in the last two years as shown in the last column of the chart. In contrast, the actuarial return on assets in the two years preceding the July 1, 2000 valuation exceeded the assumption by approximately 9% (4.3% + 4.8%). The asset loss in the last two years increased the unfunded actuarial accrued liability (UAAL) by about \$72 million. Without the asset losses, the UAAL would be closer to \$423 million instead of the \$495 million shown in Table 6.

The asset losses of the last two years are projected to have a much larger impact on the funding of the System in the next four years. The actuarial asset method recognizes asset gains and losses over five years. At July 1, 2000 the System had \$137 million in unrecognized asset gains. These gains partially offset the recognition of losses in the last two years. At July 1, 2002 the System has \$443 million in unrecognized asset losses. This \$443 million in unrecognized asset losses, if not offset by future gains, will cause the amortization period of the UAAL in future valuations to fall outside the measures accepted as financially sound. Therefore, to stay financially sound in the future, the System will need either (1) future gains such as asset returns well over 8.0%, or (2) an increase in contribution rates.

### Assumption Changes

The valuation results include all changes made to the assumptions as detailed in our Investigation of Active Member Demographic Experience, dated August 29, 2002. See Table A-1 for a summary of assumptions including those changed for this 2002 valuation.

### Benefit Changes

The following benefit improvement was passed in the 2001 legislative session:

- a \$600 minimum benefit for members and beneficiaries retired at July 1, 2000 where the member at time of retirement had 25 years of service.

### Contribution Changes

There have been no contribution changes since the July 1, 2000 actuarial valuation.

### Impact of Changes

The effect of the asset losses and other experience on the amortization period can be distributed approximately as follows:

<u>Amortization Period Remaining at July 1, 2002</u>			
July 1, 2000 Valuation Amortization Period			15.1 years
Passage of time		-	2.0
Effect of Changes in Benefits and Contribution Rates		+	0.2
Effect of Changes in Actuarial Assumptions		+	<u>4.1</u>
Expected Amortization Period at July 1, 2002			17.4 years
Effect of Experience Gains and Losses on Actuarial Accrued Liability:			
Salary Increases (Gain)	-	1.1	
Retired Mortality (Loss)	+	0.3	
Loss from Other Causes	+	<u>0.9</u>	+ 0.1
Effect of Experience Loss on Actuarial Assets		+	<u>5.9</u>
July 1, 2002 Valuation Amortization Period		+	23.4 years

**Teachers' Retirement System**  
**A Component Unit of the State of Montana**

**Section 2**

**Scope of the Report**

This report presents the actuarial valuation of the Montana Teachers' Retirement System as of July 1, 2002.

A summary of the findings resulting from this valuation is presented in the previous section. Section 3 describes the assets of the System. Sections 4 and 5 describe how the obligations of the System are to be met under the actuarial cost method in use.

The actuarial procedures and assumptions used in this valuation are described in Appendix A. The current benefit structure, as determined by the provisions of the governing law on July 1, 2002, is summarized in Appendix B. Schedules of valuation data classifying the data used in the valuation by various categories of contributing members, former contributing members, and beneficiaries make up Appendix C. Appendix D provides a brief summary of the System's recent experience. Comparative statistics are presented on the System's membership and contribution rates. Appendix E is a glossary of actuarial terms used in this report.

# **Teachers' Retirement System A Component Unit of the State of Montana**

## **Section 3**

### **Assets**

In many respects, an actuarial valuation can be regarded as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is July 1, 2002. On that date, the assets available for the payment of benefits are appraised. These assets are compared with the actuarial liabilities. The actuarial process thus leads to a method of determining what contributions by members and their employers are needed to strike a balance.

The asset valuation method being used is a five-year smoothing method. The expected return is determined each year based on the beginning of year market value and actual cash flows during the year. Any difference between the expected market value return and the actual market value return is recognized evenly over a period of five years.

Table 1 summarizes the determination of the actuarial value of assets. Table 2 shows when asset gains or losses will be recognized in the actuarial value of assets. Table 3 summarizes historical asset returns since July 1, 1994 including the amount recognized by the actuarial asset valuation method, which was greater or lesser than the actuarial investment return assumption.

**Teachers' Retirement System  
A Component Unit of the State of Montana**

**Table 1**

**Determination of Actuarial Value of Assets  
July 1, 2002**

**Determination of Recognized Investment Gains and Losses - Five-Year Smoothing**

A. Expected investment return – Year Ended 6/30/2002	\$ 177,683,301
B. Actual investment return – Year Ended 6/30/2002	\$ (161,191,880)
C. Gains/(losses) – 2002 [B – A]	\$ (338,875,181)
D. Gains/(losses) – 2001	\$ (310,524,198)
E. Gains/(losses) – 2000	\$ (3,684,142)
F. Gains/(losses) – 1999	\$ 78,945,961
G. Gains/(losses) – 1998	\$ 147,873,557
H. Gains/(losses) recognized at July 1, 2002* [1/5 C + 1/5 D + 1/5 E + 1/5 F + 1/5 G]	\$ (85,252,802)

**Determination of Actuarial Assets**

Actuarial value of assets July 1, 2001	\$ 2,428,684,863
Contributions less benefits	\$ (36,333,714)
Expected investment return	177,683,301
Recognized investment gains/(losses)	<u>(85,252,802)</u>
	<u>56,096,785</u>
<b>Actuarial value of assets July 1, 2002</b>	<b>2,484,781,648</b>
Unrecognized Loss	<u>(443,099,128)</u>
Market Value of Assets July 1, 2002 (Actuarial Value + Unrecognized Gain)	\$ 2,041,682,520

Note: The actuarial value of assets is equal to the expected value plus a five-year smoothing of market value gains and losses. The actuarial asset method was adopted for the July 1, 2000 actuarial valuation with actuarial value of assets set equal to market value of assets at July 1, 1996. Deferred asset gains and losses prior to July 1, 1996 are ignored.

\* Includes \$1 rounding adjustment.

**Teachers' Retirement System  
A Component Unit of the State of Montana**

**Table 2**

**Schedule of Investment Gain/(Loss) Recognition  
(in millions)  
July 1, 2002**

Fiscal Year Ending 06/30	Market Value Investment Gain/(Loss) Over the Expected 8%	Investment Gain/(Loss) Recognized in Past Years					Investment Gain/(Loss) to be Recognized in Future Years				
		1998	1999	2000	2001	2002	2003	2004	2005	2006	
1997	\$ 166.1	\$ 33.2	\$ 33.2	\$ 33.2	\$ 33.2	\$ 29.5					
1998	147.9	29.5	29.5	29.5	29.5	15.8	\$ 15.8				
1999	78.9	15.8	15.8	15.8	15.8	(0.7)	(0.7)	\$ (0.7)			
2000	(3.7)	(0.7)	(0.7)	(0.7)	(0.7)	(62.1)	(62.1)	(62.1)	\$ (62.1)		
2001	(310.5)					(67.8)	(67.8)	(67.8)	(67.8)	\$ (67.8)	
2002	(338.9)						0.0	0.0	0.0	0.0	
2003	0.0							0.0	0.0	0.0	
2004	0.0								0.0	0.0	
2005	0.0									0.0	
2006	0.0										0.0

Total Gain/(Loss) Recognized at Each Valuation Date			
Recognized		Scheduled to be Recognized*	
\$62.7	\$78.5	\$77.8	\$15.7
		\$ (85.3)	\$ (114.8)
		\$ (130.6)	\$ (129.9)
		\$ (67.8)	\$ (67.8)
Unrecognized Gain/(Loss) Remaining			
		\$ (328.3)	\$ (197.7)
		\$ (67.8)	\$ (67.8)
		\$0.0	\$0.0

\* The total gain/(loss) actually recognized in each future year will include additional amortizations of future gains and/or losses

**Teachers' Retirement System**  
**A Component Unit of the State of Montana**

**Table 3**

**Historical Investment Returns\***

<b>Fiscal Year Ending</b>	<b>Market Returns</b>	<b>Actuarial Return</b>	<b>Actuarial Return Over 8.0% Assumption</b>
June 30, 1995	15.7%	8.9%	0.9%
June 30, 1996	12.4	10.4	2.4
June 30, 1997	19.4	14.9	6.9
June 30, 1998	16.6	16.0	8.0
June 30, 1999	11.9	12.3	4.3
June 30, 2000	7.8	12.8	4.8
June 30, 2001	(5.1)	9.2	1.2
June 30, 2002	(7.3)	3.8	(4.2)

*\*Returns reflect all investment returns, including investment income and realized and unrealized investment gains and losses, and are net of investment expenses and administrative expenses paid by the System.*

**Teachers' Retirement System**  
**A Component Unit of the State of Montana**

**Section 4**

**Actuarial Present Value of Future Benefits**

In the previous section, an actuarial valuation was related to an inventory process, and an analysis was given of the inventory of assets of the System as of the valuation date, July 1, 2002. In this section, the discussion will focus on the commitments of the System, which will be referred to as its actuarial liabilities.

Table 4 contains an analysis of the actuarial present value of all future benefits for contributing members, for former contributing members, and for beneficiaries. The analysis is given by type of benefit.

The actuarial liabilities summarized in Table 4 include the actuarial present value of all future benefits expected to be paid with respect to each member covered as of the valuation date. For an active member, this value includes a measure of both benefits already earned and future benefits to be earned. Thus, for all members, active and retired, the value extends over benefits earnable and payable for the rest of their lives and, if an optional benefit is chosen, for the lives of their surviving beneficiaries.

The actuarial valuation does not recognize liabilities for employees who become members and participate in the System after the valuation date.



**Teachers' Retirement System**  
**A Component Unit of the State of Montana**

**Table 4**

**Actuarial Present Value of Future Benefits**  
**for Contributing Members, Former Contributing**  
**Members, and Beneficiaries**  
 (All amounts are actuarial present values in millions)

	<u>July 1, 2002</u>	<u>July 1, 2000</u>
	<u>Total</u>	<u>Total</u>
A. Active members		
Service retirement	\$ 1,699.6	\$ 1,559.9
Disability retirement	20.4	27.2
Survivors' benefits	40.8	44.1
Vested Retirement	29.2	35.0
Refund of Member Contributions	<u>32.1</u>	<u>35.9</u>
Total	\$ 1,822.1	\$ 1,702.1
B. Inactive members and annuitants		
Service retirement	\$ 1,430.9	\$ 1,201.7
Disability retirement	16.1	15.3
Beneficiaries*	90.8	76.0
Vested terminated members	47.0	40.0
Nonvested terminated members	<u>13.6</u>	<u>13.7</u>
Total	\$ 1,598.4	\$ 1,346.7
C. Grand Total	\$ 3,420.5	\$ 3,048.8

\* Includes survivors of active and retired members, and children's benefits.

# **Teachers' Retirement System**

## **A Component Unit of the State of Montana**

### **Section 5**

#### **Employer Contributions**

In the previous two sections, attention has been focused on the assets and actuarial liabilities of the System. A comparison of Tables 3 and 6 indicates that there is a shortfall in current actuarial assets to meet the present value of all future benefits for current members and beneficiaries. This is the universal experience in all but a fully closed-down fund where no further contributions of any sort are anticipated.

In an active system, there will always be a difference between the actuarial liabilities and the assets. This difference has to be funded with future contributions and investment returns. An actuarial valuation sets a schedule of future contributions that will deal with this funding in an orderly fashion.

The method used to determine the incidence of the contributions in various years is called the actuarial cost method. For this valuation, the entry age actuarial cost method has been used. Under this method, or essentially any actuarial cost method, the contributions required to meet the difference between current assets and current actuarial liabilities are allocated each year between two elements:

- A normal cost amount, which ideally is relatively stable as a percentage of salary over the years; and
- Whatever amount is left over, which is used to amortize what is called the unfunded actuarial accrued liability.

The two items described above, normal cost and unfunded actuarial accrued liability, are the keys to understanding the actuarial cost method. Let us first discuss the normal cost.

The normal cost is the theoretical contribution rate, which will meet the ongoing costs of a group of average new employees. Suppose that a group of new employees were covered under a separate fund from which all benefits and to which all contributions and associated investment return were to be paid. Under the entry age actuarial cost method, the normal cost contribution rate is that level percentage of pay, which would be exactly right to maintain this fund on a stable basis. If experience were to follow the actuarial assumptions exactly, the fund would be completely liquidated with the last payment to the last survivor of the group.

We have determined the normal cost rates separately by type of benefit under the System. These are summarized in Table 5.

The term "fully funded" is often applied to a system where contributions for everyone at the normal cost rate will fully pay for the benefits of existing as well as new employees. Often, systems are not fully funded, either because of benefit improvements in the past that have not been completely paid for or actuarial deficiencies that have occurred because experience has not been as favorable as anticipated. Under these circumstances, an unfunded actuarial accrued liability (UAAL) exists.

Table 6 shows how the UAAL was derived for the System. Lines A and B show, respectively, the total present value of future benefits and the portion of the future liability that is expected to be paid from future normal cost contributions, both employer and employee. Line C shows the actuarial accrued liability: the portion of the present value of future benefits not provided by future normal cost contributions. Line D shows the actuarial value of assets available for benefits. Line E shows the unfunded actuarial accrued liability. Lines F and G show the impact of the present value of future scheduled ORP contributions (described below) on the unfunded actuarial accrued liability.

As can be seen from this discussion, a key consideration in the adequacy of the funding of the System is how the UAAL is being amortized. Table 7 shows that the current employer and member contribution rates are adequate to pay the total normal cost rate (10.33% of pay), with enough left over to amortize the UAAL in 23.4 years. Therefore, the current basis is sufficient to meet future requirements.

The amortization of the UAAL assumes contributions made as a percent of pay for members of the Optional Retirement Plan (ORP) until June 30, 2033. Under Section 19-20-621, periodic separate valuations are to be performed to measure the liabilities of benefits to be paid under the Teachers' Retirement System (TRS) for Montana University System (MUS) members. As of the 1996 valuation, there was a \$98.0 million difference, or shortfall, which is to be funded as a level percentage of future ORP salaries from July 1, 1997 to June 30, 2033. The single contribution rate determined as of July 1, 1997 was 3.97%. However, the following graded schedule for increasing the ORP contributions was adopted:

<u>ORP Contribution Rate</u>	<u>Fiscal Years Ending</u>
2.81%	June 30, 1998
3.12%	June 30, 1999
3.42%	June 30, 2000
3.73%	June 30, 2001
4.04%	June 30, 2002 to June 30, 2033

The July 1, 2000 actuarial valuation of the MUS calculated a \$132.7 million difference or shortfall. The contribution schedule has not been changed. The value of future ORP payments included in the July 1, 2002 TRS valuation is \$111.8 million.

The unfunded actuarial accrued liability at any date after establishment of a system is affected by any actuarial gains or losses arising when the actual experience of the system varies from the experience anticipated by the actuarial assumptions used in the valuations. To the extent actual experience as it develops differs from the assumptions used, so also will the actual emerging costs differ from the estimated costs. The impact of these differences in actual experience from the assumptions is included in Section 1, the Summary of Findings.

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**Table 5**

**Normal Cost Contribution Rates  
As Percentages of Salary**

	<u>July 1, 2002</u>	<u>July 1, 2000</u>
	<u>Total</u>	<u>Total</u>
Service retirement	7.86%	6.90%
Disability retirement	0.15	0.19
Survivors' benefits	0.26	0.25
Vested retirement	0.60	0.64
Refund of member contributions	<u>1.46</u>	<u>1.73</u>
Total	10.33%	9.71%

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**Table 6**

**Unfunded Actuarial Accrued Liability**  
**(All dollar amounts in millions)**

	<u>July 1, 2002</u>	<u>July 1, 2000</u>
A. Actuarial present value of all future benefits for present and former members and their survivors (Table 4)	\$ 3,420.5	\$ 3,048.8
B. Less actuarial present value of total future normal costs for present members	<u>440.4</u>	<u>400.5</u>
C. Actuarial accrued liability	\$ 2,980.1	\$ 2,648.3
D. Less actuarial value of assets available for benefits (Table 1)	<u>2,484.8</u>	<u>2,247.5</u>
E. Unfunded actuarial accrued liability	\$ 495.3	\$ 400.8
F. Less present value of future ORP contributions*	<u>111.8</u>	<u>96.4</u>
G. Unfunded actuarial accrued liability funded by TRS contributions	\$ 383.5	\$ 304.4

*\*Paid by contributions to TRS made as a percentage of the salaries of the participants in the Optional Retirement Plan (ORP). The percentage of salary will be a level 4.04% for the Fiscal Years ending in 2002 through 2033.*

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**Table 7**

**Recommended Contribution Rates  
As Percentages of Salary**

	<u>July 1, 2002</u>	<u>July 1, 2000</u>
A. Employer contribution rate*	7.58%	7.58%
B. Member contribution rate	<u>7.15</u>	<u>7.15</u>
C. Total contribution rate	14.73%	14.73%
D. Less total normal cost rate (Table 5)	<u>10.33</u>	<u>9.71</u>
E. Amount available to amortize unfunded actuarial accrued liability**	4.40%	5.02%
F. Amortization period from Valuation Date	23.4 years	15.1 years***

\* In accordance with MCA 19-20-604, the employer contribution rate will return to 7.47% when the amortization period of the System's unfunded actuarial accrued liability is 10 years or less according to the System's latest actuarial valuation.

\*\* In addition, a percentage of the salaries of the participants in the Optional Retirement Plan (ORP) is available to help amortize the unfunded actuarial accrued liability.

\*\*\* The amortization period as of July 1, 2000 was 15.1 years; thus, the expected period as of July 1, 2002 is 13.1 years assuming no changes in benefits or assumptions. A summary of the impact of changes since the prior valuation is in Section 1.

# **Teachers' Retirement System**

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### **Section 6**

#### **Cash Flows**

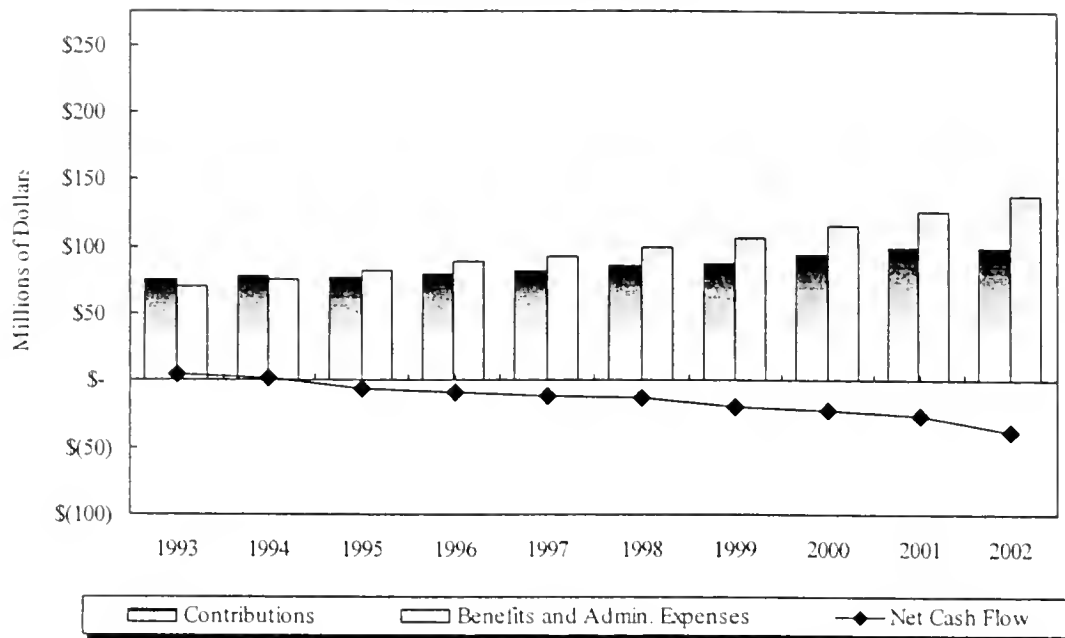
The fundamental equation for funding a retirement system is that benefits and administrative expenses must be provided for by contributions (past and future) and investment income. When a retirement system matures, benefits and administrative expenses often exceed contributions. In this case we say the system has a "negative cash flow." Mature systems are characterized by negative cash flows and large pools of assets. This is natural. Actuarial funding is designed to accumulate large pools of assets, which will in turn provide investment income and finance negative cash flows when systems mature. If the fund is looked at as a whole, investment income is usually larger than the difference between contributions and benefit payments. The retirement system's investment strategy should recognize the need for actual cash funds when benefit payments exceed the cash income from contributions.

The Table 8 shows that until 1995 the System had a positive cash flow. In the year ended June 30, 2002 the System's benefits and administrative expenses exceeded contributions by \$38 million. At the current contribution rates this is projected to increase to \$114 million for the year ending June 30, 2012.

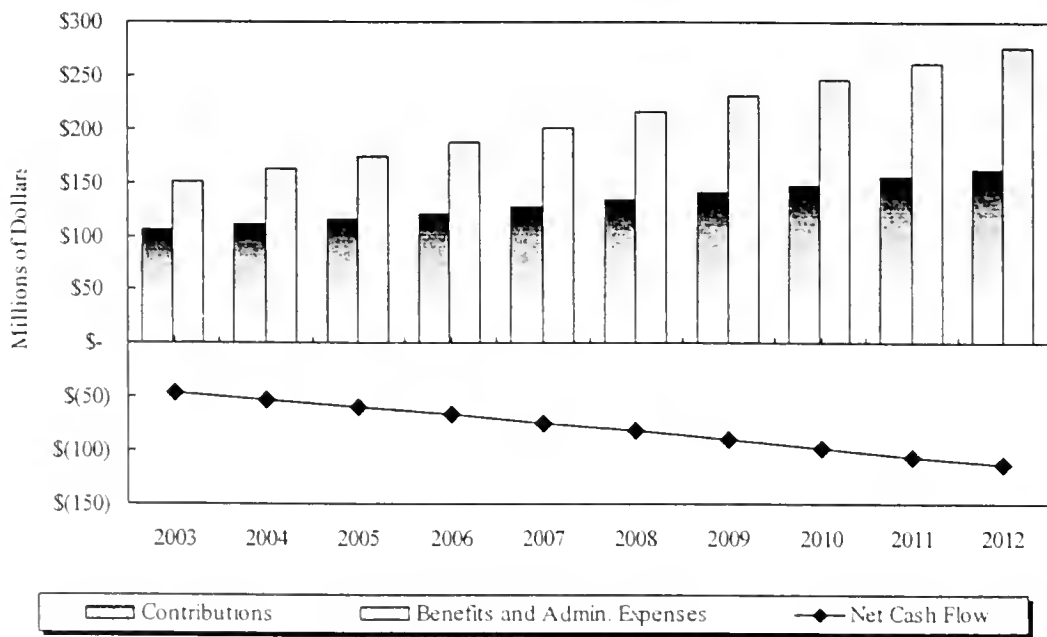
As long as the System had a positive cash flow, there was no need to plan where the funds would come from to pay benefits since benefits could be paid by incoming contributions. A negative cash flow, as defined above, requires planning what funds will be used to pay the difference between benefits and contributions. We are providing these projections to aid in developing the investment strategy for the System's assets.

The projected contributions and administrative expenses are based on the actual amounts for the year ended June 30, 2002. Contributions are assumed to increase at the general wage increase assumption of 5%. Expenses are assumed to increase at the underlying inflation assumption of 4%.

### Cash Flow History



### Cash Flow Projections





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**Table 8**

**Cash Flow History and Projections**

Year Ended <u>June 30,</u>	<b>Historical Cash Flows*</b>		
	<u>Contributions</u>	<u>Benefits &amp; Administrative Expenses</u>	<u>Net Cash Flow</u>
1993	75	71	4
1994	78	76	2
1995	77	83	(6)
1996	80	89	(9)
1997	82	93	(11)
1998	87	100	(13)
1999	88	107	(19)
2000	94	116	(22)
2001	100	126	(26)
2002	100	138	(38)

Year Ending <u>June 30,</u>	<b>Projected Cash Flows*</b>		
	<u>Contributions</u>	<u>Benefits &amp; Administrative Expenses</u>	<u>Net Cash Flow</u>
2003	\$ 105	\$ 152	\$ (47)
2004	110	163	(53)
2005	116	175	(59)
2006	122	188	(66)
2007	128	202	(74)
2008	134	216	(82)
2009	141	231	(90)
2010	148	246	(98)
2011	155	262	(107)
2012	163	277	(114)

\* Millions of Dollars

# **Teachers' Retirement System**

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### **Appendix A**

#### **Actuarial Procedures and Assumptions**

The actuarial assumptions used in this valuation were adopted by the Board for the July 1, 2002 Actuarial Valuation. Several assumptions were changed as a result of our study, Investigation Of Active Member Demographic Experience, dated August 29, 2002.

Tables A-3 through A-6 give rates of decrement for service retirement, disablement, mortality, and other terminations of employment. These rates of decrement are referred to in actuarial literature as the absolute rate of decrement, or  $q'_x$ . Table A-7 shows the assumed probability of retaining membership in the System among members terminating with five or more years of service.

#### **Actuarial Cost Method**

The actuarial valuation was prepared using the entry age actuarial cost method. Under this method, the actuarial present value of the projected benefits of each individual included in the valuation is allocated as a level percentage of the individual's projected compensation between entry age and assumed exit. The portion of this actuarial present value allocated to a valuation year is called the normal cost. The normal cost was first calculated for each individual member. The normal cost rate is defined to equal the total of the individual normal costs, divided by the total pay rate.

The portion of this actuarial present value not provided for at a valuation date by the sum of (a) the actuarial value of the assets and (b) the actuarial present value of future normal costs is called the unfunded actuarial accrued liability. The unfunded actuarial accrued liability is amortized as a level percentage of the projected salaries of present and future members of the System.

#### **Records and Data**

The data used in the valuation consist of financial information; records of age, sex, service, salary, contribution rates, and account balances of contributing members; and records of age, sex, and amount of benefit for retired members and beneficiaries. All of the data were supplied by the System and are accepted for valuation purposes without audit.

### **Replacement of Terminated Members**

The ages at entry and distribution by sex of future members are assumed to average the same as those of the present members they replace. If the number of active members should increase, it is further assumed that the average entry age of the larger group will be the same, from an actuarial standpoint, as that of the present group. Under these assumptions, the normal cost rates for active members will not vary with the termination of present members.

### **Employer Contributions**

At the time of this valuation, the total employer contribution rate for normal costs and amortization of the unfunded actuarial accrued liability was 7.58% of members' salaries. In accordance with MCA 19-20-604, the employer contribution rate will return to 7.47% when the amortization period of the System's unfunded actuarial accrued liability is 10 years or less according to the System's latest actuarial valuation.

### **Administrative and Investment Expenses**

The administrative and investment expenses of the System are assumed to be funded by investment earnings in excess of 8% per year.

### **Valuation of Assets - Actuarial Basis**

The actuarial asset valuation method spreads asset gains and losses over five years. The expected return is determined each year based on the beginning of year market value and actual cash flows during the year. Any difference between the expected market value return and the actual market value return is recognized evenly over a period of five years. The gains and losses are measured starting with the year ended June 30, 1997. Adopted in the July 1, 2000 actuarial valuation.

### **Investment Earnings**

The annual rate of investment earnings of the assets of the System is assumed to be 8% per year, compounded annually.

### **Interest on Member Contributions**

Interest on member contributions is assumed to accrue at a rate of 6% per annum, compounded annually. This assumption was set as of July 1, 1998.

### **Postretirement Benefit Increases**

On January 1 of each year, the retirement allowance payable must be increased by 1.5% if the retiree's most recent retirement effective date is at least 36 months prior to January 1 of the year in which the adjustment is to be made.

### **Future Salaries**

The rates of annual salary increase assumed for the purpose of the valuation are illustrated in Table A-2. In addition to increases in salary due to merit and longevity, this scale includes an assumed 5.0% annual rate of increase in the general wage level of the membership. The merit and longevity increases for the MUS members did not show a pattern of increasing or decreasing with service at the time of our most recent study. Therefore, the MUS members have a flat 1% merit and longevity assumption. The general wage increase assumption was adopted July 1, 1998 and the merit and longevity scales were adopted July 1, 2002.

Montana University System (MUS) members are assumed to have a 0.63% higher average final compensation to account for the larger than average annual compensation increases observed in the years immediately preceding retirement.

### **Service Retirement**

Table A-3 shows the annual assumed rates of retirement among members eligible for service retirement. Separate rates are used when a member is eligible for reduced benefits, for the first year a member is eligible for full benefits, and for the years following the first year a member is eligible for full benefits. The rates for General Members were adopted July 1, 2002. The rates for University Members were adopted July 1, 2002.

### **Disablement**

The rates of disablement used in this valuation are illustrated in Table A-4. The rates for General Members were adopted July 1, 2002. The rates for University Members were adopted July 1, 1996.

### **Mortality**

The mortality rates used in this valuation are illustrated in Table A-5. A written description of each table used is included in Table A-I. These rates were adopted July 1, 2000.

### **Other Terminations of Employment**

The rates of assumed future withdrawal from active service for reasons other than death, disability or retirement are shown for representative ages in Table A-6. These rates were adopted July 1, 2002.

### **Benefits for Terminating Members**

Members terminating with less than five years of service are assumed to request an immediate withdrawal of their contributions with interest. Table A-7 shows the assumed probability of retaining membership in the System among members terminating with five or more years of service. These rates were adopted July 1, 2002.

We estimated the present value of future benefits for terminated vested members based on their available contribution account.

### **Part-Time Employees**

The valuation data for active members identify part-time members, but give no indication as to the number of hours worked. As done in the past, we imputed a "part-time percentage" by comparing the pay received with their annual equivalent full-time salary. Part-time members

earning less than \$1,000 during the last year were valued at their current member contribution balance.

**Optional Retirement Program**

The total contribution received for the fiscal year ending June 30, 2002 was \$3,960,000. Based on a contribution rate of 4.04%, we assumed the total ORP payroll for the fiscal year to be \$98,019,802 (\$3,960,000 divided by 4.04%).

**Buybacks, Purchase of Service, and Military Service**

The active liabilities and normal cost were increased to 100.5% of their original value to fund this additional service based on a study of the System's experience for the five calendar years 1995 through 1999. Effective July 1, 2000.

**Probability of Marriage**

If death occurs in active status, all members are assumed to have an eligible surviving spouse and two children. The spouse is assumed to be the same age as the member.

# Teachers' Retirement System A Component Unit of the State of Montana

Table A-1

## Summary of Valuation Assumptions

*(July 1, 2002)*

I. Economic assumptions		
A.	General wage increases*	5.00%
B.	Investment return	8.00%
C.	Growth in membership	0.00%
D.	Postretirement benefit increases (Starting three years after retirement)	1.50%
E.	Interest on member accounts	6.00%
II. Demographic assumptions		
A.	Individual salary increase due to promotion and longevity (General Member assumptions adopted July 1, 2002) (University Member assumptions adopted July 1, 2000)	Table A-2
B.	Retirement (adopted July 1, 2002)	Table A-3
C.	Disablement (adopted July 1, 2002) (General Member assumptions adopted July 1, 2002) (University Member assumptions adopted July 1, 1996)	Table A-4
D.	Mortality among contributing members, service retired members, and beneficiaries 1994 Group Annuity Mortality Table, with ages set back 3 years for males and ages set back 1 year for females. (adopted July 1, 2000)	Table A-5
E.	Mortality among disabled members Based on the IRS Social Security Disabled Mortality Tables published in Revenue Ruling 96-7. Males are 70% of the Male IRS table to age 80, grading into the 1983 Group Annuity Mortality Table for Males between ages 80 and 85. Females are 85% of the IRS table at all ages. (adopted July 1, 2000)	Table A-5
F.	Other terminations of employment (adopted July 1, 2002)	Table A-6
G.	Probability of retaining membership in the System upon vested termination (adopted July 1, 2002)	Table A-7
* Montana University System (MUS) members are assumed to have a 0.63% higher average final compensation to account for the larger than average annual compensation increases observed in the years immediately preceding retirement.		

**Teachers' Retirement System**  
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**Table A-2**

**Future Salaries**

Years of Service	General Members			University Members		
	Individual Merit & Longevity	General Wage Increase	Total Salary Increase	Individual Merit & Longevity	General Wage Increase	Total Salary Increase
1	4.51%	5.00%	9.51%	1.00%	5.00%	6.00%
2	4.09	5.00	9.09	1.00	5.00	6.00
3	3.46	5.00	8.46	1.00	5.00	6.00
4	2.94	5.00	7.94	1.00	5.00	6.00
5	2.52	5.00	7.52	1.00	5.00	6.00
6	2.21	5.00	7.21	1.00	5.00	6.00
7	1.89	5.00	6.89	1.00	5.00	6.00
8	1.68	5.00	6.68	1.00	5.00	6.00
9	1.47	5.00	6.47	1.00	5.00	6.00
10	1.31	5.00	6.31	1.00	5.00	6.00
11	1.16	5.00	6.16	1.00	5.00	6.00
12	1.00	5.00	6.00	1.00	5.00	6.00
13	0.84	5.00	5.84	1.00	5.00	6.00
14	0.68	5.00	5.68	1.00	5.00	6.00
15	0.58	5.00	5.58	1.00	5.00	6.00
16	0.47	5.00	5.47	1.00	5.00	6.00
17	0.37	5.00	5.37	1.00	5.00	6.00
18	0.26	5.00	5.26	1.00	5.00	6.00
19	0.21	5.00	5.21	1.00	5.00	6.00
20	0.16	5.00	5.16	1.00	5.00	6.00
21	0.11	5.00	5.11	1.00	5.00	6.00
22 & Up	0.00	5.00	5.00	1.00	5.00	6.00

**Teachers' Retirement System**  
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**Table A-3**

**Retirement**  
**Annual Rates**

Age	General Members			University Members		
	Eligible for Reduced Benefits	First Year Eligible for Full Benefits	Thereafter	Eligible for Reduced Benefits	First Year Eligible for Full Benefits	Thereafter
45		18.0%	9.5%		5.0%	4.9%
46		18.0	9.5		5.0	4.9
47		12.5	9.5		5.0	4.9
48		12.5	9.5		5.0	4.9
49	*	12.5	9.5	*	5.0	4.9
50	4.0%	12.5	9.5	1.9%	8.0	4.9
51	4.0	16.0	9.5	2.2	8.0	4.9
52	4.5	16.0	9.5	2.5	8.0	6.0
53	4.5	16.0	9.5	2.8	8.0	6.0
54	5.0	16.0	9.5	3.1	12.0	6.0
55	5.5	22.0	14.0	3.4	15.0	6.0
56	6.0	22.0	14.0	3.7	15.0	6.0
57	6.5	22.0	14.0	4.0	15.0	7.0
58	6.5	22.0	15.0	4.3	15.0	7.0
59	7.0	22.0	18.0	4.7	15.0	9.0
60	*	22.0	22.0	*	19.0	10.0
61		22.0	22.0		19.0	14.0
62		27.0	27.0		24.0	24.0
63		22.0	22.0		14.0	14.0
64		25.0	25.0		20.0	20.0
65		35.0	35.0		33.0	33.0
66		30.0	30.0		23.0	23.0
67		24.0	24.0		23.0	23.0
68		22.0	22.0		23.0	23.0
69		22.0	22.0		23.0	23.0
70		**	**		**	**

\* All benefits are unreduced after attaining age 60. Reduced benefits are not available before age 50.

\*\* Immediate retirement is assumed at age 70 or over



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**Table A-4**

**Disablement  
Annual Rates**

Age	General Members	University Members
25	.010%	.003%
30	.010	.006
35	.020	.012
40	.040	.021
45	.080	.036
50	.130	.055
55	.180	.083
60	.260	.126

**Table A-5**

**Mortality  
Annual Rates**

Age	Contributing Members, Service Retired Members and Beneficiaries		Disabled Members	
	Men	Women	Men	Women
25	.06%	.03%	1.92%	1.02%
30	.07	.03	2.15	1.26
35	.08	.04	2.39	1.50
40	.09	.07	2.69	1.75
45	.13	.09	3.01	2.04
50	.19	.13	3.36	2.38
55	.32	.21	3.72	2.77
60	.56	.39	4.07	3.23
65	1.01	.76	4.46	3.76
70	1.80	1.27	5.13	4.36
75	2.85	2.04	6.22	5.32
80	4.52	3.54	7.50	6.84
85	7.55	6.10	11.48	9.30

**Teachers' Retirement System**  
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**Table A-6**

**Other Terminations of Employment**  
**Among Members Not Eligible to Retire**  
**Annual Rates**

Years of Service	General Members	University Members
1	30.0%	33.0%
2	16.0	17.0
3	11.0	13.0
4	9.0	11.0
5	8.0	9.0
6	7.7	8.3
7	7.3	7.7
8	7.0	7.0
9	6.6	6.6
10	6.2	6.2
11	5.8	5.8
12	5.4	5.4
13	5.0	5.0
14	4.6	4.6
15	4.2	4.2
16	3.8	3.8
17	3.4	3.4
18 and up	3.0	3.0

**Table A-7**

**Probability of Retaining Membership in the System**  
**Upon Vested Termination**

Age	Probability of Retaining Membership
25	54%
30	54
35	58
40	58
45	60
50	70
55	75

**Teachers' Retirement System  
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**Appendix B**

**Summary of Benefit Provisions**

Effective Date	September 1, 1937
Vesting Period	5 years. No benefits are payable unless the member has a vested right, except the return of employee contributions with interest.
Final Compensation	Average of highest 3 consecutive years of earned compensation.
Normal Form of Benefits	Life only annuity. All benefits cease upon death; however, in no event will the member receive less than the amount of employee contributions with interest.
Normal Retirement Benefits	
Eligibility:	25 years of service or age 60 and 5 years of service.
Benefit:	The retirement benefit is equal to 1/60 of final compensation for each year of service.
Early Retirement Benefits	
Eligibility:	5 years of service and age 50.
Benefit:	The retirement benefit is calculated in the same manner as described for normal retirement, but the benefit is reduced 1/2 of 1% for each of the first 60 months early and 3/10 of 1% for each of the next 60 months early.

## Death Benefit

Eligibility: 5 years of service.

Benefit: The death benefit is equal to 1/60 of final compensation for each year of service accrued at date of death, with an actuarial adjustment based on the relation of the member's age at death to the beneficiary's age. A monthly benefit of \$200 is paid to each child until age 18. In addition, a lump-sum benefit of \$500 is paid upon the death of an active or retired member.

## Disability Benefit

Eligibility: 5 years of service.

Benefit: The disability benefit is equal to 1/60 of final compensation for each year of service accrued at date of disability. The minimum benefit is 1/4 of the final compensation.

## Withdrawal Benefits

With less than 5 years of service, the accumulated employee contributions with interest are returned. With more than 5 years, the member may elect a refund of contributions with interest or leave the contributions and interest in the System and retain a vested right to retirement benefits.

## Contributions

Member: 7.150% of compensation.  
Employer: 7.580% of compensation.

MCA 19-20-604 specifies that the employer contribution rate will return to 7.47% when the amortization period of the System's unfunded actuarial accrued liability is 10 years or less according to the System's latest actuarial valuation.

## Interest on Member Contributions

Interest on member contributions is currently being credited at a rate of 4.5% per annum.

## Cost-of-Living Adjustments

On January 1 of each year, the retirement allowance payable must be increased by 1.5% if the retiree's most recent retirement effective date is at least 36 months prior to January 1 of the year in which the adjustment is to be made.

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**Appendix C**

**Valuation Data**

This valuation is based upon the membership of the System as of July 1, 2002. Membership data were supplied by the System and accepted for valuation purposes without audit. However, tests were performed to ensure that the data are sufficiently accurate for valuation purposes.

Table C-1 contains summaries of the data for contributing members. For full-time members, values shown in the tables are the numbers of members and their total and average annual salaries. For part-time members, only the numbers of members are shown.

Active Members	Number	Annual Salaries in Millions
Full-Time Members	12,796	\$ 486.2
Part-Time Members*	<u>4,650</u>	<u>52.7</u>
Total Contributing Members*	17,446	\$ 538.9
Active Members with Annual Compensation less than \$1,000	<u>723</u>	
Total Active Members	18,169	

*\* Excludes part-time members with annual compensation less than \$1,000.*

Table C-2 presents distributions of the following:

- Members receiving service retirement benefits.
- Members receiving disability retirement benefits.
- Survivors of deceased retired members receiving benefits.
- Survivors of deceased active members.
- Child beneficiaries.
- Terminated vested members.

**Appendix C**  
**(continued)**

The following is a summary of retired members and beneficiaries currently receiving benefits:

Type of Annuitant	Number	Annual Benefits in Thousands	Average Annual Benefits
Service Retirement	8,438	\$ 127,870	\$ 15,154
Survivors of Deceased Retired Members	<u>689</u>	<u>6,471</u>	<u>9,392</u>
Total Service Retirement (including survivors)	9,127	134,341	14,719
Disability Retirement	200	1,614	8,072
Survivors of Deceased Active Members	402	3,082	7,666
Child Beneficiaries	<u>39</u>	<u>94</u>	<u>2,400</u>
Total Annuitants	9,768	\$ 139,131	\$ 14,244

Terminated Members with Contributions Not Withdrawn*	Number
Vested Terminated Members	1,485
Non-Vested Terminated Members	<u>8,231</u>
Total Terminated Members	9,716

\* Includes 209 records provided in the active data with salary equal to zero and contributions greater than zero.

**Teachers' Retirement System  
A Component Unit of the State of Montana**

**Table C-1**

**Active Members Distribution of  
Full-Time Employees and Salaries**

*as of July 1, 2002*

**Number of Employees - By Age Group - All Members**

Age	Completed Years of Service												Totals
	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+	
<25	17	66	15	-	-	-	-	-	-	-	-	-	98
25 to 29	41	278	225	321	111	-	-	-	-	-	-	-	976
30 to 34	9	101	128	231	604	103	-	-	-	-	-	-	1,176
35 to 39	16	79	71	127	412	497	91	-	-	-	-	-	1,293
40 to 44	21	70	49	150	320	388	507	146	-	-	-	-	1,651
45 to 49	14	68	83	128	371	417	475	639	186	-	-	-	2,381
50 to 54	12 *	35	53	92	259	450	465	544	707	181	1	-	2,799
55 to 59	8	38	23	47	118	209	243	259	339	383	66	-	1,733
60 to 64	-	8	9	13	31	57	75	83	92	113	78	10	569
65 to 69	-	2	3	1	11	14	14	11	13	10	19	4	102
70 and up	-	2	1	2	1	1	1	4	2	3	-	1	18
Totals	138	747	660	1,112	2,238	2,136	1,871	1,686	1,339	690	164	15	12,796

**Teachers' Retirement System  
A Component Unit of the State of Montana**

**Table C-1**

**Active Members Distribution of  
Full-Time Employees and Salaries**

*as of July 1, 2002*

**Annual Salaries in Thousands - By Age Group - All Members**

Completed Years of Service

Age	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+	Totals
<25	137	1,511	332	-	-	-	-	-	-	-	-	-	1,980
25 to 29	470	6,418	5,480	8,250	3,050	-	-	-	-	-	-	-	23,668
30 to 34	101	2,431	3,280	6,193	18,388	3,442	-	-	-	-	-	-	33,835
35 to 39	218	2,043	1,876	3,470	13,213	18,452	3,604	-	-	-	-	-	42,876
40 to 44	189	1,727	1,348	4,162	10,576	14,638	20,994	6,362	-	-	-	-	59,996
45 to 49	154	1,871	2,320	3,697	12,407	16,110	20,107	28,840	8,524	-	-	-	94,030
50 to 54	145	1,050	1,589	2,861	8,658	17,288	20,110	25,282	32,861	8,516	46	-	118,406
55 to 59	91	1,165	666	1,581	4,125	8,416	10,696	12,699	17,060	18,842	3,213	-	78,557
60 to 64	-	235	309	475	1,148	2,185	3,192	3,988	4,621	6,223	4,009	614	26,999
65 to 69	-	47	120	25	375	697	724	607	649	583	1,191	188	5,206
70 and up	-	35	24	35	10	25	26	209	89	152	-	41	646
<b>Totals</b>	<b>1,508</b>	<b>18,533</b>	<b>17,344</b>	<b>30,749</b>	<b>71,950</b>	<b>81,253</b>	<b>79,453</b>	<b>77,987</b>	<b>63,804</b>	<b>34,316</b>	<b>8,459</b>	<b>843</b>	<b>486,199</b>



**Teachers' Retirement System  
A Component Unit of the State of Montana**

**Table C-1**

**Active Members Distribution of  
Full-Time Employees and Salaries**

*as of July 1, 2002*

**Average Annual Salary - By Age Group - All Members**

Age	Completed Years of Service												Totals
	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+	
<25	8,038	22,897	22,142	-	-	-	-	-	-	-	-	-	20,204
25 to 29	11,467	23,086	24,354	25,701	27,474	-	-	-	-	-	-	-	24,249
30 to 34	11,232	24,072	25,629	26,810	30,443	33,416	-	-	-	-	-	-	28,772
35 to 39	13,606	25,856	26,425	27,325	32,071	37,127	39,606	-	-	-	-	-	33,161
40 to 44	8,995	24,670	27,506	27,750	33,051	37,727	41,408	43,573	-	-	-	-	36,339
45 to 49	10,991	27,508	27,948	28,883	33,442	38,632	42,331	45,133	45,827	-	-	-	39,491
50 to 54	12,103	30,005	29,981	31,101	33,429	38,418	43,248	46,475	46,480	47,048	46,390	-	42,304
55 to 59	11,769	30,662	28,972	33,630	34,959	40,267	44,017	49,032	50,324	49,197	48,686	-	45,331
60 to 64	-	29,412	34,328	36,563	37,047	38,338	42,561	48,048	50,233	55,067	51,397	61,366	47,452
65 to 69	-	23,534	40,094	25,036	34,051	49,760	51,747	55,162	49,919	58,286	62,678	47,114	51,039
70 and up	-	17,449	23,936	17,609	9,988	25,206	26,474	52,137	44,717	50,752	-	40,778	35,930
Totals	10,926	24,810	26,279	27,653	32,149	38,040	42,466	46,256	47,651	49,733	51,582	56,193	37,997

**Teachers' Retirement System  
A Component Unit of the State of Montana**

**Table C-1**

**Active Members Distribution of  
Part-Time Employees and Salaries**

*as of July 1, 2002*

**Number of Employees - By Age Group - All Members**

Age	Completed Years of Service												Totals
	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+	
<25	97	73	12	5	-	-	-	-	-	-	-	-	187
25 to 29	167	146	68	54	24	-	-	-	-	-	-	-	459
30 to 34	58	95	54	53	85	42	-	-	-	-	-	-	387
35 to 39	89	104	80	64	84	64	28	-	-	-	-	-	513
40 to 44	119	162	99	145	152	65	48	34	-	-	-	-	824
45 to 49	89	140	99	127	212	83	36	32	21	-	-	-	839
50 to 54	70	83	69	110	178	113	54	24	30	11	-	-	742
55 to 59	37	43	30	46	89	89	30	23	9	15	4	-	415
60 to 64	21	22	13	20	38	18	17	10	9	9	5	1	183
65 to 69	10	7	8	11	12	5	6	4	4	1	2	-	70
70 and up	5	4	2	7	5	4	2	1	-	-	-	1	31
Totals	762	879	534	642	879	483	221	128	73	36	11	2	4,650

**Teachers' Retirement System**  
**A Component Unit of the State of Montana**

**Table C-2**

**Distribution of Inactive Lives**

**Members Receiving Service Retirement Benefits as of July 1, 2002**

<u>Age</u>	<u>Number of Persons</u>	<u>Annual Benefits in Thousands</u>	<u>Average Annual Benefits</u>
<50	43	\$ 789	\$ 18,355
50 to 54	461	8,334	18,079
55 to 59	1,180	22,403	18,986
60 to 64	1,596	29,504	18,486
65 to 69	1,493	25,479	17,066
70 to 74	1,193	17,850	14,963
75 to 79	859	10,382	12,086
80 to 84	688	6,841	9,944
85 to 89	507	3,849	7,592
90 and up	418	2,438	5,833
Total	8,438	\$ 127,870	\$ 15,154

**Members Receiving Disability Retirement Benefits as of July 1, 2002**

<u>Age</u>	<u>Number of Persons</u>	<u>Annual Benefits in Thousands</u>	<u>Average Annual Benefits</u>
<50	14	\$ 105	\$ 7,519
50 to 54	38	315	8,291
55 to 59	30	291	9,713
60 to 64	28	243	8,681
65 to 69	22	190	8,644
70 to 74	24	199	8,287
75 to 79	15	99	6,596
80 to 84	17	103	6,045
85 to 89	9	45	5,038
90 and up	3	24	7,835
Total	200	\$ 1,614	\$ 8,072

**Teachers' Retirement System**  
**A Component Unit of the State of Montana**

**Table C-2**

**Distribution of Inactive Lives**

**Survivors of Deceased Retired Members as of July 1, 2002**

<u>Age</u>	<u>Number of Persons</u>	<u>Annual Benefits in Thousands</u>	<u>Average Annual Benefits</u>
<50	28	\$ 178	\$ 6,342
50 to 54	25	210	8,399
55 to 59	35	342	9,763
60 to 64	52	610	11,735
65 to 69	91	996	10,942
70 to 74	77	863	11,208
75 to 79	117	1,191	10,184
80 to 84	120	1,004	8,363
85 to 89	85	669	7,876
90 and up	59	408	6,917
Total	689	\$ 6,471	\$ 9,392

**Survivors of Deceased Active Members as of July 1, 2002**

<u>Age</u>	<u>Number of Persons</u>	<u>Annual Benefits in Thousands</u>	<u>Average Annual Benefits</u>
<50	79	\$ 384	\$ 4,858
50 to 54	43	295	6,870
55 to 59	58	479	8,257
60 to 64	37	458	12,373
65 to 69	35	262	7,489
70 to 74	43	461	10,730
75 to 79	41	401	9,778
80 to 84	32	177	5,546
85 to 89	15	80	5,351
90 and up	19	84	4,399
Total	402	\$ 3,082	\$ 7,666

**Teachers' Retirement System**  
**A Component Unit of the State of Montana**

**Table C-2**

**Distribution of Inactive Lives**

**Terminated Vested Members as of July 1, 2002**  
**Number of Persons**

Age	Number
<25	-
25 to 29	4
30 to 34	90
35 to 39	143
40 to 44	211
45 to 49	283
50 to 54	391
55 to 69	237
60 to 64	112
65 to 69	11
70 & above	3
Total	1,485

**Child Beneficiaries as of July 1, 2002**  
**Number of Persons**

Age	Number
<5	2
5 to 6	2
7 to 8	2
9 to 10	7
11 to 12	3
13 to 14	6
15 to 16	5
17 to 18	12
Total	39

*Child Beneficiaries all receive \$200 per month, for a total of \$93,600 per year.*

**Teachers' Retirement System  
A Component Unit of the State of Montana**

**Appendix D**

**Comparative Schedules**

This section contains tables that summarize the experience of the System shown in present and past valuation reports.

Table D-1 shows a summary of the active members covered as of the various valuation dates.

Table D-2 shows a summary of the retired and inactive members as of the various valuation dates.

Table D-3 summarizes the contribution rates determined by each annual actuarial valuation.

**Teachers' Retirement System  
A Component Unit of the State of Montana**

**Table D-1**

**Active Membership Data**

Valuation Date (July 1)	Active Members								
	Full-Time Members	Part-Time Members**	Total Contributing Members**	Part-Time Members Annual Compensation less than \$1,000	Annual Full-Time Salaries in Thousands	Average Full-Time Annual Salary	Average Age**	Average Years of Service**	Average UHre Age**
1987	13,105	1,955	15,060	*	\$340,481	\$25,981	*	*	*
1989	12,546	2,541	15,087	*	339,866	27,090	*	*	*
1992	13,502	3,141	16,643	*	401,092	29,706	42.4	11.6	30.8
1994	14,938	2,637	17,575	377	416,968	27,914	42.5	11.0	31.5
1996	13,251	5,444	18,695	1,295	424,085	32,004	43.3	11.6	31.7
1998	13,545	4,647	18,192	776	459,191	33,901	44.0	12.1	31.9
2000	13,289	4,245	17,534	886	477,160	35,906	44.5	12.2	32.3
2002	12,796	4,650	17,446	723	486,204	37,997	45.0	12.2	32.8

\* Not available.

\*\* Excludes part-time active members with annual compensation less than \$1,000.

**Teachers' Retirement System  
A Component Unit of the State of Montana**

**Table D-2**

**Retired and Inactive Membership Data**

Valuation Date (July 1)	All Annuitants			Terminated Members	
	Number	Annual Benefits in Thousands	Average Annual Benefit	Average Current Age	Average Age at Retirement
				Number Vested Terminated	Number Non-Vested Terminated
1987	6,036	\$ 43,236	\$ 7,163	*	*
1989	6,330	49,546	7,827	*	*
1992	6,927	63,483	9,165	*	*
1994	7,530	78,183	10,383	*	5,722
1996	7,896	87,351	11,063	*	6,479
1998	8,362	99,040	11,844	1,105	8,158
2000	9,021	117,227	12,995	1,152	9,308
2002	9,768	139,131	14,244	1,190	8,231
				1,256	
				1,485	

\* Not available.



**Teachers' Retirement System  
A Component Unit of the State of Montana**

**Table D-3**

**Contribution Rates**

Valuation Date (July 1)	Contribution Rates		Normal Cost Rate	UAAL Rate**
	Employee	Employer		
1989*	7.044%	7.459%	8.827	5.676%
1992	7.044%	7.459%	9.876	4.627%
1994	7.044%	7.470%	9.494	5.020%
1996	7.044%	7.470%	9.328	5.186%
1998	7.044%	7.470%	8.880	5.634%
2000	7.15%	7.58%	9.71	5.02%
2002 *	7.15%	7.58%	10.33	4.40%

\* Valuation performed by Hendrickson, Miller & Associates, Inc.

\*\* The unfunded actuarial accrued liability rate is the amount available to amortize the unfunded actuarial accrued liability. It is equal to the total contribution rate, minus the normal cost rate.

# **Teachers' Retirement System**

## **A Component Unit of the State of Montana**

### **Appendix E**

#### **Glossary**

The following definitions are largely excerpts from a list adopted in 1981 by the major actuarial organizations in the United States. In some cases the definitions have been modified for specific applicability to the Teachers' Retirement System Retirement System. Defined terms are capitalized throughout this Appendix.

#### **Actuarial Assumptions**

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement, and retirement; changes in compensation, rates of investment earnings, and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; and other relevant items.

#### **Actuarial Cost Method**

A procedure for determining the Actuarial Present Value of pension plan benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal Cost and an Actuarial Accrued Liability.

#### **Actuarial Gain (Loss)**

A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions during the period between two Actuarial Valuation dates, as determined in accordance with a particular Actuarial Cost Method.

#### **Actuarial Present Value**

The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions.

#### **Actuarial Valuation**

The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.

#### **Actuarial Value of Assets**

The value of cash, investments and other property belonging to a pension plan, as used by the actuary for the purpose of an Actuarial Valuation.

#### **Actuarially Equivalent**

Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.

**Amortization Payment**

That portion of the pension plan contribution, which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

**Entry Age Actuarial Cost Method**

A method under which the Actuarial Present Value of the Projected Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this Actuarial Present Value allocated to a valuation year is called the Normal Cost. The portion of this Actuarial Present Value not provided for at a valuation date by the Actuarial Present Value of future Normal Costs is called the Actuarial Accrued Liability.

**Normal Cost**

That portion of the Actuarial Present Value of pension plan benefits and expenses, which is allocated to a valuation year by the Actuarial Cost Method.

**Actuarial Accrued Liability**

That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of pension plan benefits and expenses which is not provided for by future Normal Costs.

**Unfunded Actuarial Accrued Liability**

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets.

**Accrued Benefit**

The amount of an individual's benefit (whether or not vested) as of a specific date, determined in accordance with the terms of a pension plan and based on compensation and service to that date.

**Projected Benefits**

Those pension plan benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits.

**Unaccrued Benefit**

The excess of an individual's Projected Benefits over the Accrued Benefits as of a specified date.



# **STATISTICAL SECTION**

**REVENUES BY SOURCE & EXPENSES BY TYPE**

**CONTRIBUTION RATES**

**MEMBERSHIP**

**ACTIVE and INACTIVE MEMBERS**

**RETIRED MEMBERS and BENEFIT RECIPIENTS**

**LOCATION OF BENEFIT RECIPIENTS**



**Teachers' Retirement System  
A Component Unit of the State of Montana**

**Revenues By Source**

<u>Year</u>	<u>Employee Contributions</u>	<u>Employer Contributions</u>	<u>Investment Income</u>	<u>Other</u>	<u>Total</u>
1993 – 1994	38,748,884	39,164,487	73,076,482		150,989,853
1994 – 1995	37,782,158	39,071,610	72,498,507		149,479,691
1995 – 1996	39,174,350	40,626,732	98,083,315	189,823	178,074,220
1996 – 1997	40,348,306	41,639,722	104,797,668	101,267	186,886,963
1997 – 1998	41,937,700	44,476,127	102,174,892	200,083	188,788,802
1998 – 1999	42,641,714	44,986,852	102,501,716	122,732	190,253,014
1999 – 2000	45,599,246	47,848,084	112,924,791	696,779	207,068,900
2000 – 2001	48,277,894	50,989,948	162,712,312	617,258	262,597,412
2001 – 2002	47,872,258	51,518,712	99,058,806	762,677	199,212,453
2002 – 2003	50,221,491	53,276,950	99,289,817	758,298	203,546,556

**Expenses By Type**

<u>Year</u>	<u>Benefit Payments</u>	<u>Withdrawals</u>	<u>Investment Expenses</u>	<u>Administrative Expenses</u>	<u>Total</u>
1993 – 1994	70,580,682	4,156,137	198,704	647,480	75,583,003
1994 – 1995	78,589,558	3,373,147	177,081	628,596	82,768,382
1995 – 1996	83,763,230	4,158,612	12,711,571	684,885	101,318,298
1996 – 1997	88,631,324	3,839,562	12,596,802	675,961	105,743,649
1997 – 1998	94,204,970	4,826,198	10,381,523	881,452	110,294,143
1998 – 1999	100,028,083	5,126,013	9,686,951	1,360,660	116,201,707
1999 – 2000	109,231,029	5,271,306	10,667,097	1,293,805	126,463,237
2000 – 2001	118,841,895	5,370,493	10,243,034	1,715,782	136,171,204
2001 – 2002	130,006,163	6,472,327	5,481,637	1,606,737	143,566,864
2002 – 2003	140,229,496	6,468,324	3,709,410	1,860,967	152,268,198

**Teachers' Retirement System  
A Component Unit of the State of Montana  
Contribution Rates**

EMPLOYEE

1937 - 1973	5.000%
1973 - 1975	5.125%
1975 - 1977	6.125%
1977 - 1983	6.187%
1983 - 1999	7.044%
1999 -	7.150%

EMPLOYER

1937 - 1945	NONE
1945 - 1959	3.750%
1959 - 1969	4.000%
1969 - 1971	4.500%
1971 - 1975	5.125%
1975 - 1977	6.250%
1977 - 1981	6.312%
1981 - 09/30/81	6.432%
10/01/81 - 06/30/83	6.463%
1983 - 1985	7.320%
1985 - 1989	7.428%
1989 - 1993	7.459%
01/01/94 -	7.470%

*Unless otherwise noted, contribution rate changes occur on July 1*



**Teachers' Retirement System**  
**A Component Unit of the State of Montana**  
**Membership**

**Active and Inactive Members**

<u>Period Ended</u>	<u>Active Members</u>	<u>Inactive Vested Members</u>	<u>Inactive Non-vested</u>	<u>Total</u>
June 30, 1994	17,439	1,113	5,761	24,313
June 30, 1995	18,062	1,130	6,201	25,393
June 30, 1996	18,332	1,012	6,050	25,394
June 30, 1997	18,222	1,173	7,560	26,955
June 30, 1998	18,205	1,179	8,061	27,445
June 30, 1999	18,287	1,209	8,612	28,108
June 30, 2000	18,423	1,245	9,212	28,880
June 30, 2001	18,530	1,359	10,034	29,923
June 30, 2002	18,199	1,468	8,040	27,707
June 30, 2003	19,575	1,300	6,665	27,540

**Retired Members and Benefit Recipients**

<u>Period Ended</u>	<u>Retirement</u>	<u>Survivors</u>	<u>Disability</u>	<u>Child Benefits</u>	<u>Total</u>
June 30, 1994	6,531	358	271	38	7,198
June 30, 1995	6,800	365	274	35	7,474
June 30, 1996	7,011	370	273	34	7,688
June 30, 1997	7,212	366	279	44	7,901
June 30, 1998	7,400	376	276	36	8,088
June 30, 1999	7,661	377	282	38	8,358
June 30, 2000	7,927	399	291	23	8,640
June 30, 2001	8,288	398	294	36	9,016
June 30, 2002	8,615	401	295	31	9,342
June 30, 2003	8,957	401	294	30	9,682

**Teachers' Retirement System  
Location of Benefit Recipients**

Alabama	7	New Mexico	18
Alaska	30	New York	16
Arizona	224	North Carolina	14
Arkansas	10	North Dakota	81
California	147	Ohio	12
Colorado	100	Oklahoma	20
Connecticut	4	Oregon	152
Florida	36	Pennsylvania	8
Georgia	8	South Carolina	5
Hawaii	12	South Dakota	41
Idaho	128	Tennessee	10
Illinois	15	Texas	61
Indiana	4	Utah	41
Iowa	12	Vermont	3
Kansas	15	Virginia	24
Kentucky	3	Washington	332
Louisiana	4	West Virginia	5
Maine	2	Wisconsin	25
Maryland	4	Wyoming	80
Massachusetts	7	District of Columbia	1
Michigan	15	APO	5
Minnesota	69	Australia/New Zealand	6
Mississippi	2	Canada	14
Missouri	23	Holland	1
Montana	7,520	Puerto Rico	1
Nebraska	24	Scotland/England	3
Nevada	98	South Africa	1
New Jersey	3	<b>TOTAL</b>	<b><u>*9,506</u></b>
		*176 recipients receive two benefits.	



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